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The Council think it proper to state that the authors of the several communications are alone responsible for the statements, reasonings, and opinions contained in their respective papers.

20, HANOVER SQUARE, W.;
August, 1890.

228192

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1868 BRIGHT, GEORGE CHARLES, M.D., Cannes, Alpes Maritimes, France.

1868 BRIGHT, JOHN MEABURN, M.D., Forest Hill, S.E.

O.M. BRISTOWE, JOHN S., M.D., F.R.S., 13, Old Burlington Street, W. (C. 1869–70, V.P. 1879–80.) *Trans.* 4.

O.M. BROADBENT, WILLIAM HENRY, M.D., 34, Seymour Street, W. (C. 1871–3, V.P. 1881–3, P. 1887–8.) *Trans.* 17.

1887 BROCK, J. H. E., M.D., B.S., 115, Adelaide Road, N.W.

O.M. BRODHURST, BERNARD EDWARD, 20, Grosvenor Street, W. *Trans.* 2.

1876 BROWNE, GEORGE BUCKSTON, 80, Wimpole Street, W. *Trans.* 2.

1887 BROWNE, OSWALD AUCHINLECK, M.B.

1883 BRUCE, JOHN MITCHELL, M.D., 70, Harley Street, W.

O.M. BRYANT, THOMAS, 65, Grosvenor Street, W. (C. 1872, V.P. 1876–7, P. 1885–6.) *Trans.* 8.

O.M. BUCHANAN, GEORGE, M.D., F.R.S., 24, Nottingham Place, W. (C. 1877.)

1884 BUCK, WILLIAM ELGAR, M.D., 5, Welford Road, Leicester.

1890 BUCKLAND, FRANCIS O., B.A., M.B., C.M., 6, Lower Sloane Street, S.W.

1886 BULL, WILLIAM C., M.B., 35, Clarges Street, Piccadilly, W.

1881 BURNET, ROBERT WILLIAM, M.D., 6, Upp. Wimpole Street, W. *Trans.* 1.

1879 BURTON, WILLIAM EDWARD, 24, Wimpole Street, W.

1887 BUTLER-SMYTHE, ALBERT CHARLES, 35, Brook Street, W. *Trans.* 1.

1881 BUTLIN, HENRY TRENTHAM (C.), 82, Harley Street, W. (C. 1887–9.) *Trans.* 7.

1871 BUTT, WILLIAM F., 1, Southwick Crescent, Hyde Park, W.

1884 BUXTON, DUDLEY WILMOT, M.D., B.S., 82, Mortimer Street, W.

O.M. BUZZARD, THOMAS, M.D., 74, Grosvenor Street, W. (S. 1870–2, C. 1873–6, V.P. 1880–1.) *Trans.* 14, *C.S.* 1.

1886 CAHILL, JOHN, 12, Seville Street, Lowndes Square, S.W.

1890 CALVERT, JAMES, M.D., 36, Queen Anne Street, W.

1888 CARPENTER, GEORGE ALFRED, M.B., St. Ermin's Mansions, Westminster, S.W.

1889 CARTE, WILLIAM ALEXANDER, M.B., M.Ch., Victoria Barracks, Windsor.

1883 CARTER, FREDERICK HEALES, 4, Putney Hill, S.W.

1869 CARTER, ROBERT BRUDENELL, 27, Queen Anne Street, W. (C. 1873–6, V.P. 1879–81.) *Trans.* 8.

ELECTED

1885 CATON, RICHARD, M.D., 86, Rodney Street, Liverpool. *Trans.* 2.

1868 CAVAFY, JOHN, M.D., 2, Upper Berkeley Street, W. (C. 1881–3.) *Trans.* 4.

O.M. CAYLEY, WILLIAM, M.D., 27, Wimpole Street, W. (C. 1874–5, S. 1876–8, C. 1879–80, V.P. 1885–6.) *Trans.* 7, *C.S.* 1.

1884 CHAPMAN, PAUL M., M.D., 1, St. John Street, Hereford.

1885 CHEYNE, W. WATSON, M.B., C.M., 59, Welbeck Street, W.

1873 CHISHOLM, EDWIN, M.D., Abergeldie, Ashfield, near Sydney, New South Wales.

1868 CHOLMELEY, WILLIAM, M.D., 63, Grosvenor Street, W. (C. 1871–3.) *Trans.* 2.

O.M. CHURCH, WILLIAM SELBY, M.D., 130, Harley Street, W. (C. 1874–6.)

1873 CHURTON, THOMAS, M.D., 35, Park Square, Leeds. (C. 1889.) *Trans.* 2.

1882 CLAPHAM, EDWARD, M.D., 29, Lingfield Road, Wimbledon.

O.M. CLAPTON, EDWARD, M.D., 10A, St. Thomas's Street, Southwark, S.E. (C. 1872–4.) *Trans.* 1.

O.M. CLARK, Sir ANDREW, Bart., M.D., LL.D., F.R.S., 16, Cavendish Square, W. (C. 1876–8, V.P. 1880–2, P. 1883–4.) *Trans.* 2.

1874 CLARK, ANDREW, 71, Harley Street, W.

1887 CLARK, FRANCIS WILLIAM, Ridge House, Staithes, Yorkshire.

1885 †CLARKE, J. MICHELL, M.B., 2, York Buildings, Clifton, Bristol.

1885 CLARKE, WILLIAM BRUCE, M.B., 46, Harley Street, W.

1877 †CLAY, ROBERT HOGARTH, M.D., 4, Windsor Villas, Plymouth.

1887 CLEMOW, ARTHUR HENRY WEISS, M.D., C.M., 2, Talgarth Road, West Kensington, W.

1877 *CLUTTON, HENRY HUGH, M.A., 2, Portland Place, W. (C. 1885–7.) *Trans.* 8, *C.S.* 2.

1882 COLLIER, HERBERT, M.D., The Grange, Gorleston, Great Yarmouth, Norfolk.

1878 COLLINS, W. MAUNSELL, M.D., M.C., 10, Cadogan Place, S.W.

1882 COLQUHOUN, DANIEL, M.D., Dunedin, New Zealand.

1872 COOKE, THOMAS, 40, Brunswick Square, W.C.

1868 COOPER, FRANK W., Leytonstone, Essex.

1887 COTES, CHARLES E. H., M.B., 42, Davies Street, Berkeley Square, W.

1880 COTTLE, WYNDHAM, M.D., 3, Savile Row, W.

O.M. COUPER, JOHN, 80, Grosvenor Street, W. (C. 1874.)

1875 COUPLAND, SIDNEY, M.D. (C.), 16, Queen Anne Street, W. (S. 1882–4, C. 1885–7.) *Trans.* 4, *C.S.* 2.

1886 COUSINS, JOHN WARD, M.D., Riversdale, Kent Road, Southsea. *Trans.* 1.

1882 COXWELL, C. F., M.B. *Trans.* 2.

1879 CRIPPS, WILLIAM HARRISON (C.), 2, Stratford Place, W. (C. 1868–8.) *Trans.* 3.

1872 CRITCHETT, ANDERSON, 21, Harley Street, W.

1877 CROCKER, HENRY RADCLIFFE, M.D., 121, Harley Street, W. (C. 1884–5.) *Trans.* 14.

ELECTED

O.M. CROFT, JOHN, 48, Brook Street, W. (C. 1870–2, V.P. 1882–4.) *Trans.* 12.

1890 CROWLE, THOMAS HENRY RICKARD, 3, Campden Hill Road, Kensington, W.

1872 DALBY, Sir WILLIAM BARTLETT, M.B., 18, Savile Row, W. (C. 1879–81.) *Trans.* 4.

1882 DALLAWAY, J. W. DENNIS, 5, Duchess Street, W.

1886 DAVIES, ARTHUR T., M.B., 23, Finsbury Square, E.C. *C.S.* 4.

1879 DAVIES-COLLEY, J. NEVILLE C., M.B., M.C., 36, Harley Street, W. (C. 1885–6.) *Trans.* 6.

1879 †DAVY, HENRY, M.D., 29, Southernhay, Exeter.

1868 DAY, WILLIAM HENRY, M.D., 10, Manchester Square, W. *Trans.* 5.

1889 DEAN, HENRY PERCY, 60, Gower Street, W.C.

1879 †DENNIS, FREDERIC S., M.D., 21, East 21st Street, New York, U.S.

1875 DENT, CLINTON T., 61, Brook Street, W. (C. 1884–6.) *Trans.* 2.

O.M. DICKINSON, WILLIAM HOWSHIP, M.D. (V.P.), 9, Chesterfield Street, W. (C. 1874–5, V.P. 1888–9.) *Trans.* 2.

1871 DIVER, EBENEZER, M.D., Kenley, Caterham Valley, Surrey. (C. 1890.)

O.M. DOWN, JOHN LANGDON H., M.D., 81, Harley Street, W. (C. 1870–2.) *Trans.* 1.

1874 DOWSE, THOMAS STRETCH, M.D., 14, Welbeck Street, W. *Trans.* 5.

1868 DRAGE, CHARLES, M.D., Hatfield, Herts.

1879 DREWITT, F. G. DAWTREY, M.D. (C.), 52, Brook Street, W. (C. 1886–8.) *Trans.* 2.

O.M. DUCKWORTH, Sir DYCE, M.D., 11, Grafton Street, Bond Street, W. (C. 1875–7, V.P. 1887–8.) *Trans.* 16, *C.S.* 5.

O.M. DUFFIN, ALFRED B., M.D., 18, Devonshire Street, W. (C. 1872–4.) *Trans.* 6.

1884 DUKE, EDGAR, 30, Pevensey Road, St. Leonard's-on-Sea.

1869 DUKE, OLLIVER THOMAS, M.B., Surgeon, Bengal Army, India.

1889 DUNCAN, JOHN, M.D., St. Petersburg.

O.M. DURHAM, ARTHUR EDWARD, 82, Brook Street, W. (C. 1867–9, V.P. 1884–5.) *Trans.* 5.

1884 EDMUNDS, WALTER, M.C., 75, Lambeth Palace Road, S.E.

1882 EMOND, EMILE, M.D., 113, Boulevard Beaumarchais, Paris.

O.M. ERICHSEN, JOHN E., LL.D., F.R.S., 6, Cavendish Place, W. (V.P. 1869–71.)

1868 EVANS, JULIAN, M.B., 123, Finborough Road, Redclyffe Square, S.W.

1888 *EVE, FREDERIC S., 125, Harley Street, Cavendish Square, W.

1877 EWART, WILLIAM, M.D., 33, Curzon Street, W. (C. 1884–6.)

1868 †FAIRBANK, FREDERICK ROYSTON, M.D., 46, Hall Gate, Doncaster. *Trans.* 1.

1889 FARDON, EDWARD ASHBY, Middlesex Hospital.

1885 FENN, EDWARD LIVEING, M.D., 1, Portland Terrace, Richmond Green, Surrey.

ELECTED

1887 FENWICK, E. HURRY, 5, Old Burlington Street, W. *Trans.* 1.

1872 FENWICK, J. C. J., M.D., 25, North Road, Durham.

1878 FIELD, GEORGE P., 34, Wimpole Street, W.

1876 FINLAY, DAVID WHITE, M.D., 9, Lower Berkeley Street, W. (C. 1885–7.) *Trans.* 5.

1885 FITZ-PATRICK, THOMAS, M.D., 30, Sussex Gardens, Hyde Park, W.

1889 FLEMMING, PERCY, M.D., 35, Regent's Park Road, N.W.

1878 *FONMARTIN, HENRY DE, M.D., 1, Anchor Gate Terrace, Portsea, Hants.

1889 FORBES, DANIEL MACKAY, Shoreditch Infirmary, 204, Hoxton Street, N.

1890 FORMAN, E. BAXTER, M.D., 11, Bramham Gardens, S. Kensington, S.W.

1881 FOWLER, JAMES KINGSTON, M.D. (C.), 35, Clarges Street, W. (C. 1887–9.) *Trans.* 4, *C.S.* 5.

1886 FOX, R. HINGSTON, M.D., 23, Finsbury Square, E.C.

1878 FOX, THOMAS COLCOTT, M.B. (C.), 14, HarleyStreet, W. (C. 1888–9.) *Trans.* 5, *C.S.* 1.

1887 FREEMAN, HENRY WILLIAM, 24, Circus, Bath.

1890 FULLER, HENRY ROXBURGH, 45, Curzon Street, W.

1888 GAGE-BROWN, CHARLES HERBERT, M.D., 74, Cadogan Place, S.W.

1868 GANT, FREDERICK JAMES, 16, Connaught Square, W. (C. 1877–9.) *Trans.* 3.

1887 GARROD, ARCHIBALD EDWARD, M.A., M.D., 9, Chandos Street, W.

1879 GARSTANG, THOMAS WALTER HARROPP, The Heath, Knutsford, Cheshire.

1885 GIBBONS, ROBERT ALEXANDER, M.D., 29, Cadogan Place, S.W. *Trans.* 1.

1868 GLOVER, JAMES GREY, M.D., 25, Highbury Place, N. (C. 1878–80.) *Trans.* 2.

1882 GODDARD, EUGENE, M.D., 106, Highbury New Park, N.

1875 GODLEE, RICKMAN JOHN, M.S. (C.), 81, Wimpole Street, W. (C. 1882–3, 1887–9, S. 1884–6.) *Trans.* 12, *C.S.* 4.

1882 GOLDIE, ROBERT WILLIAM, Medical Superintendent, Poplar and Stepney Sick Asylum, Devon's Road, Bromley.

1878 GOLDING-BIRD, C. H., M.B. (C.), 12, Queen Anne Street, W. (C. 1887–9.) *Trans.* 10.

1875 GOODHART, JAMES FREDERIC, M.D., 25, Weymouth Street, W. (C. 1880–2.) *Trans.* 11, *C.S.* 2.

1869 GOODRIDGE, HENRY FREDERICK AUGUSTUS, M.D., 10, Brock Street, Bath.

1882 GOODSALL, D. H., 17, Devonshire Place, W.

1877 GOULD, A. PEARCE, M.S., 10, Queen Anne Street, W. (C. 1885–7.) *Trans.* 9, *C.S.* 2.

1875 GOWERS, WILLIAM RICHARD, M.D., F.R.S., 50, Queen Anne Street, W. (C. 1881–2.) *Trans.* 4.

1868 GREEN, T. HENRY, M.D., 74, Wimpole Street, W. (C. 1877–9.) *Trans.* 2, *C.S.* 1.

ELECTED

1875 †GREENFIELD, WILLIAM SMITH, M.D., 7, Heriot Row, Edinburgh. (C. 1881.) *Trans.* 3.

1883 GROSS, CHARLES, M.D., M.S., Medical Superintendent, St. Saviour's Infirmary, East Dulwich Grove, S.E.

1868 †GUERNEAU DE MUSSY, HENRI, M.D., 15, Rue du Cirque, Paris.

1887 HABERSHON, SAMUEL HERBERT, M.D., 70, Brook Street, W.

1882 HADDEN, WALTER BAUGH, M.D. (C.), 21, Welbeck Street, W. (C. 1886–8.) *Trans.* 8, *C.S.* 1.

1875 HALE, C. D. B., 8, Sussex Gardens, W.

1878 HALL, F. DE HAVILLAND, M.D., 47, Wimpole Street, W. (C. 1885–87.) *Trans.* 7, *C.S.* 2.

1885 HALLIBURTON, WILLIAM DOBINSON, M.D., 25, Maitland Park Villas, Haverstock Hill, N.W.

1889 HALSTEAD, GEORGE EZRA, M.D., B.S., Ramsgate.

1888 HANDFIELD-JONES, MONTAGU, M.D., 24, Montagu Square, W.

1886 †HANDFORD, HENRY, M.D., 14, Regent Street, Nottingham. *Trans.* 3.

1886 HARDIE, JAMES, M.D., 15, St. John Street, Manchester.

O.M. HARLEY, JOHN, M.D., F.L.S., 9, Stratford Place, W. (C. 1875.) *Trans.* 1.

1872 HARRIS, HENRY, M.D., Trengweath, Redruth, Cornwall.

1889 HARRIS, HERBERT ELWIN, M.B., St. George-in-the-East Infirmary.

1881 HARRISON, CHARLES EDWARD, M.B., Grenadier Guards Hospital, Rochester Row, S.W.

1869 HAWARD, J. WARRINGTON (V.P.), 16, Savile Row, W. (C. 1876–8, 1884–6, S. 1881–3, V.P. 1888.) *Trans.* 12.

1886 HAWKINS, FRANCIS HENRY, M.B., 59, Wimpole Street, W.

1889 HAWKINS, HERBERT RENNELL, M.B., B.S., St. Thomas's Hospital, S.E.

1890 HAWKINS-AMBLER, GEORGE ARTHUR, Riley, Kirkburton, Yorks.

O.M. HEATH, CHRISTOPHER (*President*), 36, Cavendish Square, W. (C. 1867–71, V.P. 1876–8, T. 1879–88, P. 1889–90.) *Trans.* 18.

1879 HENDERSON, GEORGE COURTENAY, M.D., Kingston, Jamaica, West Indies.

1882 HERON, GEORGE ALLAN, M.D., 57, Harley Street, W.

1884 HERRINGHAM, WILMOT PARKER, M.D., 13, Upper Wimpole Street, W. *Trans.* 1, *C.S.* 1.

1888 †HETHERINGTON, GEORGE HAYNES, 10, Museum Street, Ipswich.

O.M. HEWETT, Sir PRESCOTT GARDNER, Bart., F.R.S., Chestnut Lodge, Horsham, Sussex. (V.P. 1869–71, P. 1873–4.) *Trans.* 3.

O.M. HEWITT, GRAILY, M.D., 36, Berkeley Square, W. (C. 1878–9.) *Trans.* 1.

O.M. HICKS, J. BRAXTON, M.D., F.R.S., F.L.S., 24, George Street, W. (C. 1875–7.)

1868 HILL, BERKELEY, M.B., 66, Wimpole Street, W. (C. 1870–1.) *Trans.* 7, *C.S.* 1.

1874 HOLDERNESS, WILLIAM BROWN, 15, Park Street, Windsor.

ELECTED

1868 †HOLMAN, CONSTANTINE, M.D., Reigate, Surrey.

O.M. HOLMES, TIMOTHY, 18, Great Cumberland Place, W. (C. 1867–9, V.P. 1873–5.) *Trans.* 16.

O.M. HOLT, BARNARD WIGHT, 14, Savile Row, W. *Trans.* 1.

O.M. HOLTHOUSE, CARSTEN. (C. 1870–2.) *Trans.* 8.

1878 HOOD, DONALD WILLIAM CHARLES, M.D., 43, Green Street, W. *Trans.* 1.

1873 HOPE, WILLIAM, M.D., 56, Curzon Street, W.

1883 HOPKINS, JOHN, Central London Sick Asylum, Cleveland Street, W. *C.S.* 1.

1884 HORSLEY, VICTOR, M.B., F.R.S., 80, Park Street, W. *Trans.* 2, *C.S.* 1.

1880 *HOVELL, T. MARK, 3, Mansfield Street, W.

1876 HOWSE, HENRY GREENWAY, M.S., 59, Brook Street, W. (C. 1881–3, V.P. 1890.) *Trans.* 3.

O.M. HULKE, JOHN WHITAKER, F.R.S., 10, Old Burlington Street, W. (C. 1867–9, V.P. 1878–80.) *Trans.* 13.

1889 HUMPHERY, FRANCIS WILLIAM, M.B., 63, Prince's Gate, S.W.

O.M. HUMPHRY, GEORGE MURRAY, M.D., F.R.S., Cambridge. (V.P.1867–70.)

O.M. HUTCHINSON, JONATHAN, F.R.S., 15, Cavendish Square, W. (C. 1867–8, V.P. 1875–6.) *Trans.* 14, *C.S.* 1.

1879 INKSON, JAMES, M.D., Brigade Surgeon, Army.

1883 JACKSON, GEORGE HENRY, Lansdowne House, Tottenham.

O.M. JACKSON, J. HUGHLINGS, M.D., F.R.S. (V.P.), 3, Manchester Square, W. (C. 1872–3, V.P. 1887.) *Trans.* 2.

1877 JACOBSON, WALTER HAMILTON ACLAND, M.B., M.S., 66, Great Cumberland Place, W. C. 1890. *Trans.* 1.

1888 JAMISON, ARTHUR, M.D., C.M., 26, Lowndes Street, S.W.

1888 JAMES, J. T., M.B., 30, Harley Street, W.

1875 JESSETT, FREDERICK BOWREMAN, 16, Upper Wimpole Street, W.

O.M. JOHNSON, GEORGE, M.D., F.R.S., 11, Savile Row, W. (V.P. 1874–6.) *Trans.* 5.

1889 JOHNSON, RAYMOND, M.B., B.S., 123, Gower Street, W.C.

1878 JOHNSTON, WILLIAM, M.D., M.C., 16, Lonsdale Terrace, Upper Kent Street, Leicester.

O.M. JONES, SYDNEY, M.B., 16, George Street, Hanover Square, W. (C. 1867–8, V.P. 1886–7.) *Trans.* 2.

1872 JONES, THOMAS RIDGE, M.D., 4, Chesham Place, S.W.

1876 JORDAN, FURNEAUX, Selly Hill, Birmingham. *Trans.* 1.

1886 JULER, HENRY EDWARD, 77, Wimpole Street, W.

1878 KEETLEY, CHARLES ROBERT BELL, 56, Grosvenor Street, W. *Trans.* 2.

O.M. KELLY, CHARLES, M.D., Worthing, Sussex.

1882 KESTEVEN, WILLIAM HENRY, 16, Parkhurst Road, N. *Trans.* 1.

1883 KIDD, PERCY, M.D., 60, Brook Street, W. *Trans.* 3, *C.S.* 1.

1887 †KNAGGS, R. LAWFORD, B.C., Huddersfield. *Trans.* 1.

1878 LACEY, THOMAS WARNER, 196, Burrage Road, Plumstead.

ELECTED

1883 LANE, WILLIAM ARBUTHNOT, M.B., M.S., 8, St. Thomas's Street, S.E. *Trans.* 3, *C.S.* 2.

O.M. LANGTON, JOHN, 62, Harley Street, W. (C. 1878–80.) *Trans.* 2.

1886 LANKESTER, HERBERT, M.D., 1, Elm Park Gardens, South Kensington, S.W.

1885 LARDER, HERBERT, Whitechapel Infirmary, Baker's Row, N.E. *C.S.* 1.

O.M. LAWSON, GEORGE, 12, Harley Street, W. (S. 1871–3, C. 1874–6, V.P. 1881–3.) *Trans.* 16.

1877 †LEDIARD, HENRY AMBROSE, M.D., 41, Lowther Street, Carlisle. (C. 1889.) *Trans.* 5.

O.M. LEE, HENRY, 9, Savile Row, W. (V.P. 1870–2.) *Trans.* 7.

1877 LEES, DAVID B., M.D., 22, Weymouth Street, W. (C. 1885.) *Trans.* 3.

1879 LICHTENBERG, GEORGE, M.D., 47, Finsbury Square, E.C.

1890 LITTLE, JOHN FLETCHER, M.B., 60, Welbeck Street, W.

1868 LITTLE, LOUIS STROMEYER, China.

1875 LIVEING, EDWARD, M.D., 52, Queen Anne Street, W.

1872 LIVEING, ROBERT, M.D., 11, Manchester Square, W. (C. 1883–4.) *Trans.* 2.

1885 LOCKWOOD, CHARLES BARRETT, 19, Upper Berkeley Street, W.

1876 LONGHURST, ARTHUR EDWIN TEMPLE, M.D., 22, Wilton Street, S.W. (C. 1889.) *Trans.* 1.

1881 LUBBOCK, MONTAGU, M.D., 19, Grosvenor Street, W.

1876 LUCAS, R. CLEMENT, M.B., B.S., 18, Finsbury Square, E.C. (C. 1883–5.) *Trans.* 9.

1879 LUNN, JOHN REUBEN, New Marylebone Infirmary, Rackham Street; Ladbroke Grove Road, W. (C. 1890.) *Trans.* 5, *C.S.* 7.

1889 MACBRIDE, P., M.D., 16, Chester Street, Edinburgh.

1871 MAC CORMAC, Sir WILLIAM (V.P.), 13, Harley Street, W. (C. 1877–9, V.P. 1888–9.) *Trans.* 5.

1883 †MACFARLANE, ALEXANDER WILLIAM, M.D., 6, Manchester Square.

1884 MCGILL, ARTHUR FERGUSSON, 23, Park Square, Leeds. *Trans.* 1.

1881 MCHARDY, MALCOLM MACDONALD, 5, Savile Row, W. *Trans.* 1.

1882 MACKENZIE, FREDERIC MORELL, 29, Hans Place, S.W.

O.M. MACKENZIE, Sir MORELL, M.D., 19, Harley Street, W. *Trans.* 4.

1879 MACKENZIE, STEPHEN, M.D., 18, Cavendish Square, W. (C. 1884, 1888–9, S. 1885–7.) *Trans.* 8, *C.S.* 10.

1884 MACKERN, JOHN, M.B., St. German's Lodge, Shooter's Hill Road, Blackheath.

1879 MACLAGAN, THOMAS JOHN, M.D., 9, Cadogan Place, S.W. (C. 1889.) *Trans.* 1.

1885 MACLAREN, RODERICK, M.D., Portland Square, Carlisle. *Trans.* 1.

1875 MACNAMARA, CHARLES, 13, Grosvenor Street, W. (C. 1879–81.) *C.S.* 1.

1879 MAGILL, JAMES, M.D., M.C., Coldstream Guards Hospital, Vincent Square, Westminster, S.W.

ELECTED

1885 MAGUIRE, ROBERT, M.D., 4, Seymour Street, W. *Trans.* 1.

1881 MAKINS, GEORGE HENRY, 2, Queen Street, W. *Trans.* 1, *C.S.* 5.

1887 MALCOLM, JOHN D., M.B., C.M., 24, Bryanston Street, W.

1888 †MARRIOTT, HYDE, M.B., Dial House, Stockport.

1868 MARSH, F. HOWARD (V.P.), 30, Bruton Street, W. (C. 1876–7, 1881–3, S. 1878–80, V.P. 1887–8.) *Trans.* 10, *C.S.* 3.

1875 MARSHALL, F. J., St. George's Hospital, W.

1888 MARTIN, HENRY ARTHUR, M.D., 1, Philbeach Gardens, Earl's Court, S.W.

1887 MARTIN, SIDNEY, M.D., B.S., 10, Mansfield Street, W.

1888 MASON, DAVID JAMES, M.D., C.M., Maidenhead.

1884 MAUDSLEY, HENRY CARR, M.D., 11, Spring Street, Melbourne, Victoria.

1868 †MAY, EDWARD HOOPER, M.D., High Cross, Tottenham, Middlesex.

1888 MAY, W. P., M.B., Goldburn, Eltham Road, Blackheath, S.E.

1888 MENZIES, J. HERBERT, 1, Gwendwr Road, West Kensington, W.

1878 MEREDITH, WILLIAM APPLETON, C.M. (C.), 6, Queen Anne Street, W. (C. 1887–9.) *Trans.* 2.

1873 MICKLE, WILLIAM JULIUS, M.D., Grove Hall Asylum, Bow, E.

1877 MILNER, EDWARD, 32, New Cavendish Street, W.

1882 MONEY, ANGEL, M.D. (C.), 24, Harley Street, W. (C. 1888–9.) *Trans.* 3.

1874 MORGAN, JOHN HAMMOND, 68, Grosvenor Street, W. (C. 1883–5.) *Trans.* 2, *C.S.* 3.

1877 MORRIS, HENRY, M.B., 2, Mansfield Street, W. (C. 1884–6.) *Trans.* 9.

1877 MORRIS, MALCOLM ALEX., 8, Harley Street, W. (C. 1890.) *Trans.* 1.

1888 MORISON, ALEXANDER, M.D., Dunnottar, 115, Green Lanes, Highbury, N. *Trans.* 1.

1885 MOTT, FREDERICK WALKER, M.D., C.M., Meadowlead, Gayton Road, Harrow.

1879 MOULLIN, CHARLES W. MANSELL (C.), 69, Wimpole Street, W. (C. 1888–9.) *Trans.* 2.

1875 MURPHY, SHIRLEY F. (C.), 41, Queen Anne Street, W. (C. 1888–9.) *C.S.* 1.

1885 MURRAY, ALEXANDER DALTON, M.B., Ricksmansworth, Herts.

1883 MURRAY, HUBERT MONTAGUE, M.D., 27, Savile Row, W. *Trans.* 1.

1868 MYERS, ARTHUR BOWEN RICHARDS, 43, Gloucester Street, Warwick Square, S.W. (C. 1877–9.) *Trans.* 1.

1882 MYERS, A. T., M.D., 9, Lower Berkeley Street, W. *Trans.* 1.

1872 MYRTLE, ANDREW S., M.D., 8, Park Parade, Harrogate.

1874 NANKIVELL, ARTHUR WOLCOT, St. Bartholomew's Hospital, Chatham.

1875 NETTLESHIP, EDWARD, 5, Wimpole Street, W. (C. 1881–2.) *Trans.* 2.

1889 †NEWMAN, D., M.D., 18, Woodside Place, Glasgow. *Trans.* 1.

O.M. NORTON, ARTHUR TREHERN, 101, Harley Street, W. (C. 1874–6.) *Trans.* 6.

O.M. NUNN, THOMAS WILLIAM, 8, Stratford Place, W. (C. 1873–4.) *Trans.* 7.

1880 O'CONNOR, BERNARD, M.D., Greenhill Park, Harlesden, N.W. *Trans.* 1.

ELECTED

O.M. OGLE, JOHN WILLIAM, M.D., 30, Cavendish Square, W. (C. 1867–8, V.P. 1884–5.) *Trans.* 6.

1868 †OGLE, WILLIAM, M.D., 98, Friar Gate, Derby.

1883 OLIVER, GEORGE, M.D., West End Park, Harrogate. *Trans.* 1.

1887 †OLIVER, THOMAS, M.D., 12, Eldon Square, Newcastle-on-Tyne.

1887 OPENSHAW, THOMAS HORROCKS, M.B., 21, Gower Street, W.C.

1868 OPPERT, FRANZ, M.D., 128, Leipzigerstrasse, Germany. *Trans.* 1.

1877 ORD, WILLIAM MILLER, M.D. (*Treasurer*), 37, Upper Brook Street, W. (C. 1882–4, T. 1889–90.) *Trans.* 6.

1890 ORD, W. WALLIS, M.B., B.Ch., 37, Upper Brook Street, W.

1887 ORMEROD, JOSEPH ARDERNE, M.D., 25, Upper Wimpole Street, W.

1884 ORMSBY, LAMBERT HEPENSTAL, M.D., 4, Merrion Square West, Dublin.

1883 ORTON, GEORGE HUNT, M.B., 1A, Campden Hill Road, Kensington, W.

1877 OWEN, ISAMBARD, M.D. (C.), 40, Curzon Street, W. (C. 1888–9.) *Trans.* 1.

1888 OXLEY, ALFRED RICE, M.D., Streatham Common.

1888 PAGE, FREDERICK, M.D., 1, Saville Place, Newcastle-on-Tyne.

1875 PAGE, HERBERT W., M.C., M.B., 146, Harley Street, W. (C. 1882–4.) *Trans.* 3.

1884 PAGET, STEPHEN, 57, Wimpole Street, W. *Trans.* 2, *C.S.* 1.

1873 PARKER, ROBERT WILLIAM, 8, Old Cavendish Street, W. (C. 1882–4, 1890, S. 1887–9.) *Trans.* 10, *C.S.* 7.

1881 PARKER, RUSHTON, M.B., B.S., 59, Rodney Street, Liverpool. *Trans.* 1, *C.S.* 1.

1890 PARKIN, ALFRED, M.S., 15, Trinity Square, S.E.

1888 PARSONS, JOHN INGLIS, M.D., 9, Collingham Place, S.W.

1881 PASTEUR, WILLIAM, M.D., 19, Queen Street, May Fair, W. *Trans.* 1, *C.S.* 2.

1883 PAUL, JOHN LISTON, M.D., 43, Queensborough Terrace, W.

O.M. PAVY, FREDERICK WILLIAM, M.D., F.R.S., 35, Grosvenor Street, W. (C. 1869–71, V.P. 1882–4.) *Trans.* 3.

1886 PAYNE, JOSEPH FRANK, M.D., 78, Wimpole Street, W. *Trans.* 1.

1889 PEAKE, W. PEMBERTON, St. Marylebone Infirmary.

1879 PEEL, ROBERT, 130, Collins Street East, Melbourne, Victoria.

1886 †PENNY, WILLIAM JOHN, 42, Caledonia Place, Clifton.

1887 PENROSE, FRANCIS GEORGE, M.D., 24, Clarges Street, Piccadilly, W.

1882 PEPPER, AUGUSTUS JOSEPH, M.S., M.B., 13, Wimpole Street, W. *Trans.* 1.

1874 PHILLIPS, CHARLES DOUGLAS F., M.D., 10, Henrietta Street, W.

1884 PHILLIPS, SIDNEY PHILIP, M.D., 62, Upper Berkeley Street, W. *Trans.* 2.

O.M. PICK, THOMAS PICKERING, 18, Portman Street, W. (S. 1874–7, C. 1878–80, V.P. 1885–6.) *Trans.* 4.

1888 PITCAIRN, JOHN JAMES, H.M.'s Prison, Holloway, N.

1885 PITT, GEORGE NEWTON, M.D., 10, St. Thomas's Street, S.E.

ELECTED

1883 PITTS, BERNARD, M.A., M.C., 31, Harley Street, W. *Trans.* 4.
1871 †PLAYNE, ALFRED, M.B., Maidenhead.
1884 POLAND, JOHN, 4, St. Thomas's Street, S.E.
1884 POLLARD, BILTON, 24, Harley Street, W. *Trans.* 1.
1868 POLLOCK, JAMES EDWARD, M.D., 52, Upper Brook Street, W. (C. 1878–80.)
1871 POORE, GEORGE VIVIAN, M.D., 30, Wimpole Street, W. (C. 1879–81.) *Trans.* 3.
1873 PORT, HEINRICH, M.D., 48, Finsbury Square, E.C.
1881 POWELL, H. A., M.A., 1, The Avenue, Beckenham, Kent.
O.M. POWELL, R. DOUGLAS, M.D., 62, Wimpole Street, W. (C. 1874–6, V.P. 1889.) *Trans.* 4.
1868 PRENTIS, CHARLES, Surgeon-Major, Bengal Medical Service; India.
1884 PRINGLE, JOHN, JAMES, M.B., 35, Bruton Street, W. *Trans.* 1, *C.S.* 1.
1884 PYE-SMITH, PHILIP HENRY, M.D., F.R.S., 54, Harley Street, W. (C. 1890.)
O.M. QUAIN, RICHARD, M.D., LL.D., F.R.S., 67, Harley Street, W. (C. 1867–9.)
O.M. RAMSKILL, J. SPENCE, M.D., 5, St. Helen's Place, E.C.
1889 RANKING, JOHN E., M.D., Tunbridge Wells.
1873 RANSFORD, GIFFORD, M.D., 22, Sussex Square, W. (C. 1884–5.)
1868 RASCH, ADOLPHUS A., M.D., 7, South Street, E.C.
1877 RAYNER, HENRY, M.D., Middlesex County Lunatic Asylum, Hanwell, W.
1883 READ, THOMAS LAURENCE, 11, Petersham Terrace, Queen's Gate, S.W.
1868 REEVES, HENRY A., 7, Grosvenor Street, W. *Trans.* 2.
O.M. REYNOLDS, JOHN RUSSELL, M.D., F.R.S., 38, Grosvenor Street, W. (C. 1867–8.)
1868 RICE, MICHAEL W., M.D. (C. 1876–8.)
1883 RING, EDMUND CUTHBERT, 55, New Bond Street, W.
O.M. RINGER, SYDNEY, M.D., F.R.S., 15, Cavendish Place, W. (C. 1871–2.)
1877 RIVINGTON, WALTER, M.S. (C.), 22, Finsbury Square, E.C. (C. 1886–8.) *Trans.* 3.
1873 †ROBERTS, DAVID LLOYD, M.D., 11, St. John Street, Manchester.
1888 ROBERTS, FRANK ERNEST, Tulse Dale Villa, Lower Norwood, S.E.
1883 ROBERTS, FREDERICK THOMAS, M.D., 102, Harley Street, W
1890 ROBERTSON, ROBERT, M.D., Belgrave Road, Ventnor, Isle of Wight.
1885 ROBINSON, ARTHUR HENRY, M.D., Mile End Infirmary, Bancroft Road, N.E. *C.S.* 3.
1890 ROBINSON, GEORGE SOMERVILLE, 3, Marlborough Mansions, Victoria Street, S.W.
1885 ROBSON, A. W. MAYO, Hilary Place, Leeds. *Trans.* 8.
1889 ROLLESTON, HUMPHRY DAVY, M.B., B.S., St. Bartholomew's Hospital.
1888 ROPER, ARTHUR, Lewisham Hill, Blackheath.
1889 ROSS, D. M., 54, Upper Berkeley Street, W.

ELECTED

1877 ROTH, BERNARD, 29, Queen Anne Street, W. *Trans.* 1, *C.S.* 4.

1890 ROUGHTON, EDMUND WILKINSON, 60, Gloucester Place, Portman Square, W.

O.M. ROUSE, JAMES, 2, Wilton Street, S.W. (C. 1875–7.) *Trans.* 2.

1874 ROWLAND, EDWARD ROGER, Dordrecht, Wodehouse, S. Africa.

1887 RUTHERFOORD, H. T., M.B., 46, Queen Anne Street, W.

1885 RYLE, REGINALD JOHN, M.D., Green View, Hadley Green, Barnet.

1882 SAINSBURY, HARRINGTON, M.D., 63, Welbeck Street, W.

1868 SANDERSON, HUGH JAMES, M.D., 26, Upper Berkeley Street, W.

O.M. SANDERSON, JOHN BURDON, M.D., LL.D., F.R.S., 50, Banbury Road, Oxford. (S. 1867–9, C. 1870, V.P. 1871–3.) *Trans.* 3.

1873 SAVAGE, GEORGE HENRY, M.D., 3, Henrietta Street, W. (C. 1882–3.)

1886 SAVILL, THOMAS DIXON, M.D., Paddington Infirmary, 285, Harrow Road W. *Trans.* 1, *C.S.* 2.

1885 SAWTELL, TOM HENRY, M.B., Cortebelle (Var), France. *Trans.* 1.

1886 SCOTT, ALFRED, 15, German Place, Brighton.

1877 SEATON, EDWARD, M.D., 35, George Street, Hanover Square, W. *Trans.* 1.

1869 SEDGWICK, LEONARD WILLIAM, M.D., 2, Gloucester Terrace, Hyde Park, W. (C. 1879–81.)

1878 SEMON, FELIX, M.D., 39, Wimpole Street, W. (C. 1885–7.) *Trans.* 7.

1884 SHARKEY, SEYMOUR, J., M.D., 2, Portland Place, W.

1889 SHAW, LAURISTON ELGIN, M.D., 6, St. Thomas's Street, S.E.

1875 SHERWOOD, ARTHUR PAUL, 8, Seaside Road, Eastbourne.

O.M. SIBLEY, SEPTIMUS WILLIAM, 7, Harley Street, W. (C. 1871–4, V.P. 1890.)

1886 SILCOCK, ARTHUR QUARRY, M.D., M.S., 52, Harley Street, W. *Trans.* 1. *C.S.* 1.

1879 SKERRITT, EDWARD MARKHAM, M.D., Coburg Villa, Richmond Hill, Clifton, Bristol. *Trans.* 2.

1872 SLIGHT, GEORGE, M.D., 3, Clifford Street, Bond Street, W.

1882 SMITH, E. NOBLE, 24, Queen Anne Street, W. *Trans.* 1.

1888 SMITH, FREDERICK J., M.B., 7, West Street, Finsbury Circus, E.C.

1884 SMITH, R. PERCY, M.D., Bethlem Royal Hospital, St. George's Road, S.E.

O.M. SMITH, THOMAS, 5, Stratford Place, W. (C. 1869–71, V.P. 1880–2.) *Trans.* 14.

1875 SMITH, T. GILBART, M.A., M.D., 68, Harley Street, W. (C. 1883–5.)

1873 SMITH, WILLIAM JOHNSON, Seamen's Hospital, Greenwich, S.E.

1872 SMITH, WILLIAM WILBERFORCE, M.D., 14, Stratford Place, W.

1868 SNOW, WILLIAM V., M.D., Richmond Gardens, Bournemouth.

1890 SOLLY, ERNEST, M.B., 79, Lambeth Palace Road, S.E.

O.M. SOUTHEY, REGINALD, M.D., 32, Grosvenor Road, Pimlico, W. (C. 1867–70, 1876–8, S. 1873–5, V.P. 1883–4.) *Trans.* 16.

1888 SPENCER, WALTER GEORGE, M.S., M.B., 94, Wimpole Street, W.

1885 SPICER, FREDERICK, M.D., 282, Camden Road, N.W.

1888 SPICER, ROBERT HENRY SCANES, M.D., 28, Welbeck Street, W.

ELECTED

1882 SPOONER, FREDERICK HENRY, M.D., Maitland Lodge, Maitland Place, Clapton, N.E.

1876 SQUIRE, A. BALMANNO, M.B., 24, Weymouth Street, W. *Trans.* 5.

1879 STAPLES, FRANCIS PATRICK, Brigade-Surgeon, Grove House, Dartmouth Road, Blackheath.

1889 STEWART, EDWARD, M.D., 8, Upper Wimpole Street, W.

1871 STEWART, WILLIAM EDWARD, 16, Harley Street, W.

1874 †STIRLING, EDWARD C., M.D. [care of Messrs. ELDER & Co., 7, St. Helen's Place, E.C.], Adelaide, South Australia.

1888 STOKER, GEORGE, 14, Hertford Street, W.

1881 STOKES, HENRY FRASER, 2, Highbury Crescent, N.

1878 STOKES, Sir WILLIAM, M.D., 5, Merrion Square North, Dublin. *Trans.* 2.

1884 STONHAM, CHARLES, 62, Welbeck Street, W. *C.S.* 3.

1878 STRUGNELL, FREDERICK WILLIAM, 45, Highgate Road, Highgate, N.W. *C.S.* 1.

1878 †STURGE, WILLIAM ALLEN, M.D., 29, Boulevard Dubouchage, Nice, France. *Trans.* 4.

1872 *SUTHERLAND, HENRY, M.D., 6, Richmond Terrace, Whitehall, S.W. *Trans.* 1.

O.M. SUTTON, HENRY GAWEN, M.B., 9, Finsbury Square, E.C. (C. 1878.) *Trans.* 2.

1887 SUTTON, JOHN BLAND, 46, Queen Anne Street, W. *Trans.* 3.

1882 SYMONDS, CHARTERS JAMES, M.S. (C.), 26, Weymouth Street, W. (C. 1888–9.) *Trans.* 10, *C.S.* 2.

1876 SYMONDS, HORATIO PERCY, 35, Beaumont Street, Oxford.

1885 TAIT, EDWARD SABINE, M.B., 48, Highbury Park, N.

1885 TAIT, HENRY BREWER, 28, Hornsey Rise, N.

1868 TATHAM, JOHN, M.D., 12, George Street, Hanover Square, W.

1886 TAY, WARREN, 4, Finsbury Square, E.C.

1878 TAYLER, FRANCIS THOMAS, M.B., 224, Lewisham High Road, S.E.

1875 TAYLOR, FREDERICK, M.D., 20, Wimpole Street, W. (S. 1879–81, C. 1882–4.) *Trans.* 9, *C.S.* 1.

1889 TAYLOR, HENRY HERBERT, Hospital for Consumption, Brompton.

1890 TAYLOR, JAMES, M.B., National Hospital, Queen Square, W.C.

1882 TAYLOR, SEYMOUR, M.D., 16, Seymour Street, W. *Trans.* 1.

1885 †TAYLOR, W. C. EVERLEY, 34, Queen Street, Scarborough.

1886 TEALE, THOMAS PRIDGIN, M.B., F.R.S., 38, Cookridge Street, Leeds.

1882 THIN, GEORGE, M.D., 22, Queen Anne Street, W. *Trans.* 1.

1886 THOMPSON, CHARLES HERBERT, M.D., 21, Half Moon Street, W.

O.M. THOMPSON, EDMUND SYMES, M.D., 33, Cavendish Square, W. (C. 1880–2.) *Trans.* 1.

O.M. THOMPSON, Sir HENRY, 35, Wimpole Street, W. (C. 1867–8, V.P. 1886–7.) *Trans.* 3.

1887 THORNTON, JOHN KNOWSLEY, M.B., C.M., 22, Portman Street, W. (C. 1890.)

ELECTED

1872 THORNTON, WILLIAM PUGIN, 35, St. George's Road, Canterbury. *Trans.* 5.

1885 THURSFIELD, THOMAS WILLIAM, M.D., Selwood, Beauchamp Square, Leamington.

1887 TOTSUKA, KANKAI.

1874 TRAVERS, WILLIAM, M.D., 2, Phillimore Gardens, Kensington, W.

1884 TREVES, FREDERICK, 6, Wimpole Street, W. *Trans.* 5.

1882 TURNER, FRANCIS CHARLEWOOD, M.D. (C.), 15, Finsbury Square, E.C. (C. 1887–9.) *Trans.* 1.

1882 TURNER, GEORGE ROBERTSON, 49, Green Street, W. *Trans.* 4.

1888 TURNER, PHILIP DYMOCK, M.D., 8, Gloucester Terrace, Onslow Gardens, S.W.

1877 TWEEDY, JOHN, 100, Harley Street, W.

1878 TYSON, WILLIAM JOSEPH, M.D. (C.), 10, Langhorne Gardens, Folkestone. (C. 1886–8.) *Trans.* 5.

1881 UHTHOFF, JOHN CALDWELL, M.D., 46, Western Road, Hove, Brighton.

1868 VENNING, EDGCOMBE, 30, Cadogan Place, S.W. (C. 1876–8.) *Trans.* 2.

1890 VOELCKER, ARTHUR FRANCIS, M.D., B.S., 30, Argyll Road, Kensington, W.

1886 WADE, CHARLES H., Scotleigh, Chudleigh, Devon.

1868 WAGSTAFFE, WILLIAM WARWICK, Purleigh, St. John's Hill, Sevenoaks. (C. 1878.)

1886 *WAINEWRIGHT, BENJAMIN, M.B., C.M., 67, Grosvenor Street, W. *Trans.* 2, *C.S.* 1.

1885 WAKLEY, THOMAS, jun., 5, Queen's Gate, W.

1885 WALKER, CHARLES ROTHERHAM, M.D., 7, Grove Road, Leytonstone, E.

1890 WALLIS, FREDERICK CHARLES, M.B., B.S., 18, St. James's Street, S.W.

1875 WALSHAM, WILLIAM J., 27, Weymouth Street, W. (C. 1882–4.) *Trans.* 5, *C.S.* 1.

1888 WALTERS, FREDERICK RUFENACHT, M.D., 20, Finsbury Circus, E.C.

1888 †WARNER, PERCY, Woodford, Essex.

1868 WATKINS, EDWIN T., M.D., 61, Guildford Street, W.C. (C. 1881–3.)

1879 DE WATTEVILLE, ARMAND, M.A., M.D., B.Sc., 30, Welbeck Street, W.

O.M. WEBER, HERMANN, M.D., 10, Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.) *Trans.* 9.

1876 WEIR, ARCHIBALD, M.D., St. Mungho's, Great Malvern.

1868 WELLS, Sir THOMAS SPENCER, Bart., 3, Upper Grosvenor Street, W. (C. 1873.)

1882 WEST, SAMUEL, M.D. (C.), 15, Wimpole Street, W. (C. 1887–9.) *Trans.* 10, *C.S.* 1.

1874 WHEELHOUSE, CLAUDIUS GALEN, Hilary Place, Leeds. *Trans.* 1.

1868 WHIPHAM, THOMAS TILLYER, M.B., 11, Grosvenor Street, W. (C. 1878–80.) *Trans.* 12.

1874 WHISTLER, W. MCNEIL, M.D., 28, Wimpole Street, W.

ELECTED

1882 WHITE, EDWIN FRANCIS, 7, Dealtry Road, Putney.

1890 WHITE, GILBERT, B.M., M.B., B.S., 42, Hazelville Road, Hornsey Lane, N.

1883 WHITE, WILLIAM HALE, M.D. (C.), 65, Harley Street, W. (C. 1887–9.) *Trans.* 6, *S.C.* 2.

1883 WHITE, WILLIAM HENRY, M.D., 43, Weymouth Street, W. *C.S.* 1.

1882 WHITTLE, EDWARD GEORGE, M.D., 65, Dyke Road, Brighton.

1871 WIGHT, GEORGE, M.B., C.M.; 428, Liverpool Road, N.

1879 WILCOX, HENRY, M.B., Dorchester House, Herbert Road, Woolwich.

O.M. WILKS, SAMUEL, M.D., F.R.S., 72, Grosvenor Street, W. (C. 1871–2, V.P. 1886–7.) *Trans.* 1.

1884 WILLCOCKS, FREDERICK, M.D., 14, Mandeville Place, W. *C.S.* 1.

O.M. WILLETT, ALFRED, 36, Wimpole Street, W. (C. 1872–5, V.P. 1889.) *C.S.* 1.

1890 WILLETT, EDGAR, M.B., 60, Welbeck Street, W.

1888 WILLIAMS, CAMPBELL, 62, Welbeck Street, W.

O.M. WILLIAMS, CHARLES THEODORE, M.D., 2, Upper Brook Street, W. (C. 1877–9, V.P, 1889.) *Trans.* 8.

1888 WILLIAMS, DAWSON, M.D., 25, Old Burlington Street, W.

1881 WILLIAMS, JOHN, M.D., 63, Brook Street, W. (C. 1885–6.)

1870 WILLIAMS, WILLIAM RHYS, M.D., Linden House, Bertle Road, Leamington.

1890 WILLIAMS, W. ROGER, 34, Welbeck Street, W.

1876 WILLIAMSON, JAMES MANN, M.D., Ventnor, Isle of Wight.

O.M. WILLIS, FRANCIS, M.D., The Spa, Braceborough, Stamford.

1889 WILLS, WILLIAM ALFRED, M.B., 52, Davies Street, W.

1886 WILSON, ALBERT, M.D., Leytonstone, Essex.

1888 †WILSON, CLAUDE, M.D., C.M., 6, York Road, Tunbridge Wells.

1880 WOOD, JOHN, F.R.S., 61, Wimpole Street, W. (C. 1886–7.)

1890 WOOD, NEVILLE, 13, St. George's Terrace, Gloucester Road, S.W.

1883 WOODCOCK, JOHN ROSTRON, 263, Hagley Road, Birmingham.

1879 WOODWARD, GEORGE P. M., M.D., Deputy Surgeon-General; Sydney, New South Wales.

1884 WORTS, EDWIN, 6, Trinity Street, Colchester.

1888 WYMAN, WILLIAM S., M.D., Red Brae, 18, Putney Hill, S.W.

1872 YEO, I. BURNEY, M.D., 44, Hertford Street, W. (C. 1881–3.) *Trans.* 7.

[*It is requested that any change of Title or Residence be communicated to the Secretaries before the* 1*st of July in each year, in order that the list may be made as correct as possible.*]

LIST OF MEMBERS.

ORIGINAL MEMBERS (ALPHABETICALLY).

Sir Henry Acland, M.D., F.R.S.
James Andrew, M.D.
Henry Arnott.
W. Morrant Baker.
Richard Barwell.
Henry Charlton Bastian, M.D., F.R.S.
John Syer Bristowe, M.D., F.R.S.
William Henry Broadbent, M.D.
Bernard Edward Brodhurst.
Thomas Bryant.
George Buchanan, M.D., F.R.S.
Thomas Buzzard, M.D.
William Cayley, M.D.
William Selby Church, M.D.
Edward Clapton, M.D.
Sir Andrew Clark, Bart., M.D., F.R.S.
John Couper.
John Croft.
William Howship Dickinson, M.D.
John Langdon Down, M.D.
Sir Dyce Duckworth, M.D.
Alfred B. Duffin, M.D.
Arthur Edward Durham.
John Eric Erichsen, F.R.S.
John Harley, M.D.
Christopher Heath.
Sir Prescott Gardner Hewett, Bt., F.R.S.
Graily Hewitt, M.D.
J. Braxton Hicks, M.D., F.R.S.
Timothy Holmes.
Barnard Wight Holt.
Carsten Holthouse.
John Whitaker Hulke, F.R.S.
George Murray Humphry, M.D., F.R.S.
Jonathan Hutchinson, F.R.S.
J. Hughlings Jackson, M.D., F.R.S.
Sir William Jenner, Bart., M.D., F.R.S.
George Johnson, M.D., F.R.S.
Sydney Jones.
Charles Kelly, M.D.
John Langton.
George Lawson.
Henry Lee.
Sir Morell Mackenzie, M.D.
Arthur Trehern Norton.
Thomas William Nunn.
John William Ogle, M.D.
Sir James Paget, Bart., F.R.S.
Frederick William Pavy, M.D., F.R.S.
Thomas Pickering Pick.
Richard Douglas Powell, M.D.
Richard Quain, M.D., F.R.S.
J. Spence Ramskill, M.D.
John Russell Reynolds, M.D., F.R.S.
Sydney Ringer, M.D., F.R.S.
James Rouse.
John Burdon Sanderson, M.D., F.R.S.
Septimus William Sibley.
Thomas Smith.
Reginald Southey, M.D.
Henry Gawen Sutton, M.B.
Edward Symes Thompson, M.D.
Sir Henry Thompson.
Hermann Weber, M.D.
Samuel Wilks, M.D., F.R.S.
Alfred Willett.
Charles Theodore Williams, M.D
Francis Willis, M.D.

ARRANGED ACCORDING TO DATE OF ELECTION.

1868 William Cholmeley, M.D.
Constantine Holman, M.D.
Thomas Tillyer Whipham, M.B.
Christian G. H. Baümler, M.D.
John Cavafy, M.D.
Frederick James Gant.
James Grey Glover.
T. Henry Green, M.D.
Howard Marsh.
Arthur Bowen Richards Myers.
Charles Prentis.
Adolphus A. Rasch, M.D.
Hugh James Sanderson, M.D.
Edgcombe Venning.
Sir Thomas Spencer Wells, Bart.
John Ford Anderson, M.D.
George Granville Bantock, M.D.
William H. Brace, M.D.
George Charles Bright, M.D.
Frank W. Cooper.
Julian Evans, M.B.
Edward Hooper May, M.D.
Henri Gueneau de Mussy, M.D.
William Warwick Wagstaffe.
Edwin T. Watkins, M.D.
William Ogle, M.D.
Protheroe Smith, M.D.
James Edward Pollock, M.D.
Franz Oppert, M.D.
William V. Snow, M.D.
Charles Drage, M.D.
John Tatham, M.D.
Frederick Royston Fairbank, M.D.
Henry A. Reeves.
Michael W. Rice, M.D.
William Henry Day, M.D.
John Meaburn Bright, M.D.
Berkeley Hill.
Louis Stromeyer Little.

1869 Robert Brudenell Carter.
Leonard William Sedgwick, M.D.
J. Warrington Haward.
Henry Frederick Augustus Goodridge, M.D.
Olliver Thomas Duke, M.B.

1870 William Rhys Williams, M.D.

1871 Julius Althaus, M.D.
Robert M. Gover, M.B.
Sir William Mac Cormac.
Alfred Playne, M.B.
William F. Butt.
George Wight, M.B.
Ebenezer Diver, M.D.
George Vivian Poore, M.D.
William Edward Stewart.

1872 Thomas Cooke
J. Burney Yeo, M.D.
Henry Harris, M.D.
William Pugin Thornton.
Robert Liveing, M.D.
Anderson Critchett.
J. C. J. Fenwick, M.D.
Andrew J. Myrtle, M.D.
Sir William Bartlett Dalby.
Thomas Ridge Jones, M.D.
George Slight, M.D.
Henry Sutherland, M.D.
Thomas Stretch Dowse, M.D.
William Wilberforce Smith, M.D.
Gifford Ransford, M.D.

1873 William Julius Mickle, M.D.
Robert William Parker.
David Lloyd Roberts, M.D.
George Henry Savage, M.D.
Heinrich Port, M.D.
Edwin Chisholm, M.D.
Thomas Churton, M.D.
William Johnson Smith.
William Hope, M.D.

1874 John Hammond Morgan.
Edward R. Rowland.
Claudius Galen Wheelhouse.
Charles Douglas F. Phillips, M.D.
W. M. Whistler, M.D.
Edward C. Stirling, M.D
William Henry Bennett.
Frederick G. Ree.
William Travers, M.D.
William Brown Holderness.
Andrew Clark.
Arthur Wolcot Nankivell.

1875 Thomas Barlow, M.D.
Marcus Beck, M.S.
Sidney Coupland, M.D.
Edward Bellamy.
Clinton T. Dent.
C. D. B. Hale.
Frederick Bowreman Jessett.
Edward Liveing, M.D.
F. J. Marshall.
Edward Nettleship.
William J. Walsham.
Rickman John Godlee, M.S.
Arthur Paul Sherwood.

1875 T. Gilbart Smith, M.D.
James Frederic Goodhart, M.D.
William Richard Gowers, M.D., F.R.S.
William Smith Greenfield, M.D.
Charles Macnamara.
Shirley F. Murphy.
Herbert W. Page.
Frederick Taylor, M.D.
1876 Arthur E. J. Barker.
Horatio Percy Symonds.
A. Balmanno Squire, M.B.
Archibald Weir, M.D.
David White Finlay, M.D.
Henry Greenway Howse, M.S.
Furneaux Jordan.
R. Clement Lucas, B.S.
James Mann Williamson, M.D.
George Buckston Browne.
Arthur Edwin Temple Longhurst, M.D.
1877 Robert Hogarth Clay, M.D.
A. Pearce Gould.
Edward Milner.
Henry Radcliffe Crocker, M.D.
David B. Lees, M.D.
Walter Hamilton Acland Jacobson, M.S.
Isambard Owen, M.D.
William Ewart, M.D.
Henry Morris, M.B.
William Miller Ord, M.D.
Walter Rivington, M.B.
Henry Rayner, M.D.
Edward Seaton, M.D.
Henry Ambrose Lediard, M.D.
Bernard Roth.
John Tweedy.
Henry Hugh Clutton.
Malcolm Alex. Morris.
1878 George P. Field.
Thomas Warner Lacy.
Thomas Colcott Fox, M.B.
Felix Semon, M.D.
Henry de Fonmartin, M.D.
C. H. Golding-Bird, M.B.
Donald Wm. Charles Hood, M.D.
Sir Joseph Lister, Bart., F.R.S.
Francis Thomas Tayler, M.B.
F. de Havilland Hall, M.D.
Storer Bennett.
Sir William Stokes, M.D.
William Allen Sturge, M.D.
William Joseph Tyson, M.D.
1878 W. Maunsell Collins, M.D.
James Barry Ball, M.D.
William Johnston, M.D.
Charles Robert Bell Keetley.
William Appleton Meredith, C.M.
Frederick William Strugnell.
1879 William Adams.
William Edward Burton.
James Magill, M.D.
Wm. John Vereker Bindon, M.D.
Edward Markham Skerritt, M.D.
Henry Wilcox, M.B.
James Inkson, M.D.
John Abercrombie, M.D.
F. G. Dawtrey Drewitt, M.D.
Stephen Mackenzie, M.D.
William Harrison Cripps.
Francis Patrick Staples.
Geo. Courteney Henderson, M.D.
Thomas John Maclagan, M.D.
Henry Davy.
Thos. Walter Harropp Garstang.
George Lichtenberg, M.D.
Charles W. Mansell Moullin.
John Reuben Lunn.
Armand de Watteville, M.D.
George P. M. Woodward, M.D.
J. Neville Davies-Colley, C.M.
Robert Peel.
Frederic S. Dennis, M.D.
1880 John Wood, F.R.S.
T. Mark Hovell.
Wyndham Cottle, M.D.
B. Ball, M.D.
Henry Francis Baker.
Bernard O'Connor, M.D.
Charles Edward Beevor, M.D.
1881 George Henry Makins.
Robert William Burnet, M.D.
James Kingston Fowler, M.D.
Charles Edward Harrison, M.B
Malcolm Macdonald McHardy.
Rushton Parker.
John Williams, M.D.
Montagu Lubbock, M.D.
James Black.
Charles Creighton, M.D.
William Pasteur, M.D.
Henry Fraser Stokes.
John Caldwell Uhthoff, M.D.
Henry Trentham Butlin.
H. A. Powell.
1882 George Robertson Turner.
E. Noble Smith.

1882 Robert William Goldie.
Walter Baugh Hadden, M.D.
Frederick Charles Barker, M.D.
William Henry Kesteven.
Frederic Morell Mackenzie.
A. T. Myers, M.D.
Daniel Colquhoun, M.D.
Seymour Taylor, M.D.
Francis Charlewood Turner, M.D.
Philip Henry Bindley, M.B.
Edward George Whittle, M.D.
D. H. Goodsall.
Frederick Henry Spooner, M.D.
J. W. Dennis Dallaway.
Frederick Haycraft Berry, M.D.
Herbert Collier, M.D.
Samuel West, M.D.
Emile Emond, M.D.
Eugene Goddard, M.D.
Charters James Symonds.
Angel Money, M.D.
Alfred G. Bateman, M.B.
C. F. Coxwell, M.B.
George Allan Heron, M.D.
Augustus Joseph Pepper, M.B.
Edward Clapham, M.D.
Harrington Sainsbury, M.D.
George Thin, M.D.
Edwin Francis White.

1883 Charles Gross.
Anthony A. Bowlby.
James Anderson, M.D.
Cecil Yates Biss, M.D.
Percy Kidd, M.D.
William Henry White, M.D.
George Oliver, M.D.
Hubert Montague Murray, M.D.
Robert Fitzroy Benham.
William Henry Allchin, M.B.
John Mitchell Bruce, M.D.
William Arbuthnot Lane, M.S.
Bernard Pitts.
Winckworth Tonge Smith, M.D.
William Hale White, M.D.
William Coode Adams, M.B.
William Anderson.
Robert Leamon Bowles, M.D.
James Dixon Bradshaw, M.D.
George Henry Jackson.
George Hunt Orton, M.B.
John Liston Paul, M.D.
Thomas Laurence Read.
Frederick Thomas Roberts, M.D.
Charles Alfred Ballance, M.B.

1883 Frederick Heales Carter.
John Hopkins.
John Rostron Woodcock.
Alexander Wm. Macfarlane, M.D.
Edward Cuthbert Ring.

1884 Frederick Willcocks, M.D.
R. Percy Smith, M.D.
Edgar Duke.
John Mackern, M.B.
Paul M. Chapman, M.D.
Wilmot Parker Herringham, M.B.
Philip Henry Pye-Smith, M.D., F.R.S.
Charles Stonham.
Dudley Wilmot Buxton, M.D.
Edwin Worts.
Seymour J. Sharkey, M.B.
Frederick Treves.
William Elgar Buck, M.D.
John James Pringle, M.B.
Frederick Lucas Benham, M.D.
Walter Edmunds, M.D.
Arthur Fergusson McGill.
Stephen Paget.
Lambert Hepenstal Ormsby, M.D.
John Poland.
Edwin Leonard Adeney, M.D.
Victor Horsley, F.R.S.
Henry Carr Maudsley, M.D.
Bilton Pollard.

1885 Frederick Spicer, M.B.
Herbert Larder.
A. Hughes Bennett.
James Berry.
Frederick Walker Mott, M.D.
George Newton Pitt, M.D.
W. C. Everley Taylor.
Sidney Philip Phillips, M.D.
A. W. Mayo Robson.
Thomas Wakley, jun.
Herbert William Allingham.
Thomas William Thursfield, M.D.
Alexander Dalton Murray, M.B.
Robert Maguire, M.D.
Robert Alexander Gibbons, M.D.
Thomas Fitz-Patrick, M.D.
Tom Henry Sawtell, M.B.
Wm. Dobinson Halliburton, M.D.
Henry Brewer Tait.
Charles Rotherham Walker, M.D.
Richard Caton, M.D.
Arthur Henry Robinson, M.D.
Edward Sabine Tait, M.B.
William Bruce Clarke.

1885 Charles Barrett Lockwood.
Reginald J. Ryle, M.D.
J. Michell Clarke, M.B.
Henry George Armstrong.
Roderick Maclaren, M.D.
W. Watson Cheyne.
Edward Liveing Fenn, M.D.
1886 Thomas Dixon Savill, M.D.
John Cahill.
Charles Henry Wade.
Benjamin Wainewright.
Waren Tay.
William John Penny.
William Henry Battle.
James Hardie, M.D.
Francis Henry Hawkins, M.B.
R. Hingston Fox, M.D.
Henry Edward Juler.
John Ward Cousins, M.D.
Joseph Frank Payne, M.D.
T. Pridgin Teale.
H. H. Lankester.
Arthur T. Davies, M.B.
William C. Bull, M.B.
Charles Herbert Thompson, M.D.
Arthur Quarry Silcock.
Henry Handford, M.D.
Alfred Scott.
Albert Wilson, M.D.
1887 Archibald E. Garrod, M.D.
H. T. Rutherfoord, M.B.
Kankai Totsuka.
Thomas Oliver, M.D.
Francis George Penrose, M.D.
Samuel Herbert Habershon, M.D.
John Knowsley Thornton.
John Bland Sutton.
Oswald Auchinleck Browne, M.B.
Albert C. Butler-Smythe.
Joseph Arderne Ormerod, M.D.
C. J. Arkle, M.D.
J. H. E. Brock, M.B., B.S.
Francis William Clark.
A. H. Weiss Clemow, M.D., C.M.
Charles E. H. Cotes, M.B.
E. Hurry Fenwick.
Henry William Freeman.
R. Lawford Knaggs, B.C.
John D. Malcolm, M.B., C.M.
Sidney Martin, M.D., B.S.
Thomas Horrocks Openshaw, M.B.
1888 A. G. Barrs, M.D.
J. W. Batterham, M.B., B.S.
Montagu Handfield-Jones, M.D.
1888 Alfred Rice Oxley, M.D.
Arthur Roper.
Robert Henry Scanes Spicer, M.D.
Campbell Williams.
Henry Arthur Martin, M.D.
Frederic S. Eve.
Alexander Morison, M.D.
Frederick Page, M.D.
Frederick J. Smith, M.B.
Frederick R. Walters, M.D.
Claude Wilson, M.D., C.M.
Charles H. Gage-Brown, M.D.
Arthur Jamison, M.D., C.M.
J. H. Menzies.
Frank Ernest Roberts.
George Stoker.
Robert Ashton Bostock.
Hugh Armstrong.
Hyde Marriott, M.B.
Percy Warner.
J. F. James, M.B.
Edwin A. Barton.
W. P. May, M.B.
Philip D. Turner, M.D.
William S. Wyman, M.D.
Dawson Williams, M.D.
Augustus W. Addinsell, M.B., C.M.
John Anderson, M.D.
Henry French Banham, M.D.
George Alfred Carpenter, M.B.
George Haynes Hetherington.
David James Mason, M.D., C.M.
John Inglis Parsons, M.D.
John James Pitcairn.
Walter G. Spencer, M.S., M.B.
1889 Theodore Dyke Acland, M.D.
Raymond Johnson, M.B., B.S.
W. Pemberton Peake.
H. Davy Rolleston, M.B., B.S.
P. MacBride, M.D.
D. Newman, M.D.
Herbert Elwin Harris, M.B.
John E. Ranking, M.D.
William Alfred Wills, M.B.
Edward Ashby Fardon.
Wm. Alexander Carte, M.B.
Stanley Boyd, M.B.
George Ezra Halstead, M.D., B.S.
Edward Stewart, M.D.
Henry Herbert Taylor.
John Duncan, M.D.
F. William Humphery, M.B.

1889 Wm. Wallis Ord, M.B., B.Ch.
L. A. Bidwell.
Arthur J. M. Bentley, M.D.
Francis R. B. Bisshopp, M.B.
Henry Percy Dean, M.B., B.S.
Louis Albert Dunn, M.S.
Percy Flemming, M.B.
Daniel Mackay Forbes.
H. Pennell Hawkins, M.B., B.S.
D. M. Ross.
Lauriston Elgin Shaw, M.D.
1890 John Rose Bradford, M.D.
Cyril Jecks, M.D. (*deceased*).
J. Fletcher Little, M.B.
Robert Robertson, M.D.
Ernest Solly, M.B.
James Taylor, M.B.
1890 Francis O. Buckland, B.A., M.B., C.M.
E. Baxter Forman, M.D.
G. Somerville Robinson.
Edmund W. Roughton, B.S.
Edgar Willett, M.B.
Thomas H. Rickard Crowle.
Robert A. Bindley.
James Calvert, M.D.
H. Roxburgh Fuller, M.D.
Arthur F. Voelcker, M.D.
Neville Wood.
W. Roger Williams.
Gilbert B. M. White, M.B., B.S.
Frederick Charles Wallis, M.B., B.S.
Alfred Parkin, M.S.
George A. Hawkins-Ambler.

REPORT

OF THE

COUNCIL OF THE CLINICAL SOCIETY.

DECEMBER, 1889.

THE Council are once again in a position to report both progress and prosperity in the Society's affairs.

The members of the Society now number 502; of these, 346 are resident, of whom 21 were elected last year, and 156 are non-resident members, of whom 9 were elected last year. During the year 6 members have died, 3 resident and 3 honorary members. The former include Dr. Habershon, an original member of the Society, and in former years an active worker in its service, Dr. Fish, and Dr. Prothero Smith. The latter include Dr. C. J. B. Williams, M. Ricord, of Paris, and Professor von Volkmann, of Halle, three men of mark and European reputation.

The balance-sheet shows that the financial condition of the Society is good; the working expenses have been all met out of current income, and there is a sum of £50 to carry forwards. The invested capital remains as before, £600.

The volume of 'Transactions' last issued to members bears testimony to the increasing activity of the Society. As a special feature of the volume must be mentioned the Appendix, consisting of supplementary reports of the unfinished cases recorded in the earlier volumes from the commencement. The reports were collected by a committee nominated for the purpose on the suggestion of the President, and consisted of Drs. Abercrombie, Crocker, Finlay, Maguire, and Pringle, and of Messrs. Bowlby, Silcock, Clutton,

Pollard, and Turner. The Council now desire to acknowledge their appreciation of the services rendered to the Society by this committee, and take this opportunity to thus publicly record it. Though a good many gaps still remain unfilled, some very useful additional information has been obtained which cannot fail to enhance the value of the records.

The Council would again remind members that in the early part of last session a new and improved method of utilising the living specimens was inaugurated. Instead of being merely shown in the anterooms before the meetings—a plan attended with much overcrowding and confusion—the living specimens are now taken one by one and formally demonstrated during the first hour of alternate meetings; after the demonstration of the case, members ask questions with a view to amplify the clinical details, though no critical discussion of the case is allowed. The regulations regarding these demonstrations, however, are only provisional, and the Council intend from time to time to make such changes as will best develop this important part of the Society's work. The large attendance on the evenings set apart for these demonstrations seems to show that the arrangement meets with the approval of the members at large.

The Council learn from Dr. Dawson Williams, the Hon. Secretary of the Committee which is inquiring into the incubation period of certain infectious diseases, that their Report is nearly completed, and that it will probably be presented early in the present year.

The present year will be memorable in the history of the Society by reason of the change in the meeting-place.

The Royal Medical and Chirurgical Society having moved into a new and more commodious house in Hanover Square, the Council of this Society decided to follow them, and have entered into an advantageous agreement for the use of meeting and other rooms, where the work of the Society can be carried on, it is thought, with even greater comfort than in the old premises. These rooms when completed will be larger and more specially adapted for their purposes, and will be lighted by electricity instead of with gas. The Council hope that the members will approve of and appreciate these changes, and that the good fortune which attended the Society's work in Berners Street will continue and increase in the new home.

TREASURER'S DRAFT BALANCE-SHEET, 1889.

	Dr.		£	s.	d.		Cr.		£	s.	d.
1889	To balance at Bank, 1st January, 1889		7	3	0	1889	By Cost of *Transactions*, Vol. XXII:				
	„ 325 Subscriptions at 21*s*.		341	5	0		Paper, printing, binding, and delivery		165	1	4
	„ 3 „ (for 1890) in advance		3	3	0		Illustrations		79	4	0
	„ 30 Admission fees at £2 2*s*.		63	0	0		Advertising and Longmans' charges		7	12	11
	„ Sale of *Transactions*:						„ Meetings:				
	By Longmans		31	17	8		Expenses of rooms		78	15	0
	„ Composition fees (4 at £5 5*s*.)		21	0	0		Refreshments		31	10	0
	„ Cash		0	7	6		R. Coldrey, for attendance		7	10	0
	„ Dividends on Consols:						Hire of microscopes		1	12	0
	January	£4 7 9					„ Secretariat and Treasury:				
	April	4 7 9					Secretarial assistance		18	18	0
	July	4 0 6					Commission to Collector		15	15	0
	October	4 0 6					Stationery		10	5	8
			16	16	6		Petty expenditure		9	14	5
							„ Balance:				
							Cash at Bank	£43 11 10			
							„ in hand	15 2 6			
									58	14	4
			£484	12	8				£484	12	8

Examined and found correct, *January 7th*, 1890. { WM. PASTEUR, M.D., G. H. MAKINS, } *Auditors.*

WILLIAM M. ORD, M.D., *Treasurer.*

ROBERT WM. PARKER, THOMAS BARLOW, M.D., } *Hon. Secs.*

COMMUNICATIONS.

I.—*A series of fourteen cases of Cholecystotomy.* By A. W. Mayo Robson. *Read October* 25, 1889.

IN 1885 I had the honour of reading before this Society a paper on cholecystotomy, based on two successful cases; since that time I have had twelve additional cases, all of which present points of interest.

It may be remembered that in the first case the operation was performed on a distended gall-bladder, and that eight facetted gall-stones were removed from a dilated cystic duct, a minute fistula being left which discharged a clear watery fluid; that fistula still remains, but the patient is now in excellent health, and has since her operation borne a child at the full time; she is so little inconvenienced as to feel it unnecessary to have anything further done for the closing of the fistula.

In the second case the operation was performed for distended gall-bladder, which seemed to be the cause of persistent vomiting; about sixty gall-stones were removed, and the patient was relieved of the vomiting and other serious symptoms, after which, she returned to her home. In this case also a fistula was left, discharging clear fluid, and cholecystectomy was successfully performed in order to rid the patient of her discharge. In both the cause of the fistula was stricture of the cystic duct, and in neither case had there been any jaundice.

The history of the subsequent cases, reported by my house-surgeons Dr. Berkely, G. A. Moynihan, and Mr. Frank H. Hudson, may be worth giving more in detail before making any remarks on the whole group.

difficulty, as on account of the matting of the parts the finger could not be passed behind the cystic duct to aid in its expulsion; after its removal the index finger, on being pushed into the duct as far as possible, discovered another impacted stone, which after repeated attempts it was found impossible to remove.

As the sequel showed, this was perhaps rather a happy circumstance, for on account of the depth, the friability, and the adhesions of the gall-bladder, it was found impossible to suture it to the surface as the stitches would not hold; hence after the suppurating cavity had been washed out with a solution of fluosilicate of soda (10 grs. to the pint) and a drainage-tube had been inserted, the upper and lower ends of the incision were drawn together by silk sutures so as to somewhat limit the opening. The peritoneal cavity was left freely open, two sponges being placed on each side of the opening into the gall-bladder so as to absorb any discharge flowing out of it. The sponges were at first changed every two hours. antiseptic precautions being adopted during the process. At the end of two days they were removed, one being simply applied directly over the drainage-tube so as to press the parietal peritoneum into contact with the visceral.

During the first two days there was some sickness, which was relieved by the administration of seidlitz powders until purging was effected. The discharge from the wound was clear and serous, and no bile was seen. The sutures were removed on the seventh, and the drainage-tube on the tenth day.

When discharged, on July 21, there was only a small patch of granulations in the centre of the scar of the incision.

The patient is now in perfect health, and the wound has completely closed.

Case 5. *Distended gall-bladder due to obstruction of the cystic duct by two large gall-stones.*—The patient, Mrs. J., æt. 40, first noticed a small, hard, rounded tumour in the right lumbar region two years previously, which at first gave her little inconvenience, but subsequently, as it increased in size, caused a heavy dragging sensation in the abdomen, which was worse when the patient moved about. There had been no jaundice and very little acute pain.

On admission there was a hard, smooth, non-fluctuating, pear-shaped tumour about the size of a goose's egg, situated below the right costal margin. When the patient was on her

back the tumour could be only indistinctly felt, but when she turned on her left side it became more prominent, and could then be readily isolated. It seemed to be connected above with the liver, and moved upwards and downwards during respiration.

July 9, 1888.—An incision of 2½ inches was made in the course of the right linea semilunaris over the centre of the tumour. On opening the gall-bladder, after several ounces of clear fluid had been withdrawn by means of an aspirator, a large gall-stone 1½ inches by 1 inch was found, with the end firmly fixed in the cystic duct. This was removed, when a second stone of almost precisely the same size was felt further on in the cystic duct. This was broken up by means of polypus forceps into several pieces before it could be removed, the removal being aided by the fingers in the abdomen pressing on the cystic duct and working its contents on towards the gall-bladder. The gall-bladder was sutured to the skin, a drainage-tube inserted, and the rest of the wound closed.

Immediately after the operation bile commenced to flow, necessitating two dressings daily, for the first two days, and afterwards a daily dressing. The sutures were removed on the seventh day, and the drainage-tube on the eighth. The discharge of bile gradually ceased, and on August 4 a note was made to the effect that the wound had almost closed, and that there had been no discharge of bile for a week.

She was discharged cured, with the wound healed, within the month.

Case 6. *Distended gall-bladder due to gall-stones.*—Mrs. A. H., æt. 42, was sent to me by my friend and late house surgeon, Mr. Ambrose Atkinson, and admitted to the Infirmary on July 27, 1888. The history given was that nineteen years previously she had had a severe attack of jaundice, when there was noticed in the right hypochondrium a small hard, smooth, round tumour, which, after a few days disappeared, the jaundice also passing away. She had had occasional attacks of jaundice up to two years before admission, when the swelling returned accompanied again by jaundice, but without the ordinary biliary colic; since that time she had never been free from pain or jaundice, or both, for many weeks. On admission the patient was slightly jaundiced, having just recovered from a characteristic attack. The tumour, which was felt in the right lumbar region, was dull

on percussion. It could be moved freely from side to side, and during respiration it rose and fell with the liver.

On August 1 a vertical incision was made in the right linea semilunaris immediately over the tumour, when one stone was felt in the gall-bladder and another in the cystic duct; the former was readily removed, the latter with some difficulty, assistance having to be given by the fingers placed within the abdomen. The gall-stones were about the size of walnuts. The fluid removed from the gall-bladder was alkaline, slightly viscid, and of a faint yellow colour; albumen and mucin were present in large quantities, but no bile salts or pigment. Under the microscope granular cells of various sizes were found and cholesterin crystals. Bile first appeared on the dressings on August 4, the tube was removed on the 6th, and the sutures on the 8th.

The bile was discharged in gradually decreasing quantities until August 20, when there was no trace of it on the dressings.

When she left the Infirmary, on August 25, the wound was healed and she was perfectly well.

Case 7. *Symptoms of cholelithiasis without tumour.*—Mrs. S. G., æt. 49, was sent to me by my friend Mr Horn, of Barnsley, and was admitted into the Infirmary on August 27, 1888. The history given was that a year ago last July she had the first of a series of attacks of severe abdominal pain which commenced in the right hypogastric region, extending thence more or less over the whole abdomen and shooting into the right shoulder. The first attack of pain was noticed in the evening soon after her tea, and lasted for two hours, being then only relieved by opium. The pain caused her to "double up" and to be covered with a cold clammy perspiration. For a day or two before the attack she had been jaundiced. After the attack of pain the yellow tinge of skin gradually disappeared. The second attack, similar to the first and fully as severe, came on in November, 1887, and the third in February, 1888; after this the attacks recurred every few weeks, and on some occasions two or even three of them followed each other in rapid succession. Slight jaundice supervened on each attack, but that symptom had never been so marked as during the first seizure. The urine had at times been highly coloured, when the motions had been like pipe-clay. On one occasion last February she found a gall-stone in the fæces. No tumour had at any time been made out.

Operation (August 29).—An incision was made vertically

downwards from the ninth costal cartilage on the right side. On opening the peritoneum no gall-bladder could be seen, but on passing the index finger to the under surface of the liver a hard pyriform tumour, about the size of a small jargonelle pear, was discovered and with difficulty drawn into view. This turned out to be the gall-bladder; and on opening it, it was found tightly packed with numerous small gall-stones which were for the most part about the size of a pea, some being rather larger. These were removed, and others blocking the cystic duct, even as far as the common duct, were also taken away; the extreme end of the common duct was not within reach. In all sixty-six stones were removed. The edges of the incision in the gall-bladder were, after some little difficulty, brought to the surface and sutured.

On the evening of the operation, and during the earlier part of the subsequent day, the patient had a little pain which gradually subsided. The tube was removed on September 1, and the sutures four days later. Bile continued to be discharged from the wound until September 9, after which no more was seen on the dressings, and the patient was discharged, within the month, with the wound healed.

In March, 1889, she reported herself as feeling very well and as having been free from the attacks of pain; the cicatrix seemed firm, but she said that it had discharged a little clear fluid on two or three occasions from a very tiny aperture.

Case 8. *Malignant disease of head of pancreas: jaundice: distended gall-bladder.*—Mr. G. B., æt. 50, was kindly sent to me by Dr Clifford Allbutt on July 28, 1888, suffering from intense jaundice with great enlargement of the liver and extreme distension of the gall-bladder, the liver being quite a hand's breadth below the lower border of the ribs, the gall-bladder reaching almost to the hypogastric region.

He gave the history of having suffered from dyspepsia for ten or twelve years; and from time to time, at varying intervals of from three to six months, he had had sudden attacks of pain over the liver, unaccompanied by jaundice and removed by poulticing. His general health in 1887 was better than formerly, but about Christmas, after a meal of pork which produced violent purging, he was seized with severe pains across the abdomen at the level of the umbilicus, and soon afterwards became jaundiced. Since that time his motions had always been white, and his urine "like porter." Although he had not suffered from pain since the attack at Christmas,

he had always felt distended after food, and had been much troubled with flatulency. The jaundice had never disappeared.

On July 28 he looked thin, and had an anxious expression of countenance; his skin was intensely jaundiced, and the subcutaneous fat seemed to have entirely disappeared. He stated that he had lost a stone in weight during the previous two years, but only a little since Christmas. His legs swelled towards evening. His appetite was good. Pulse 76, regular. The liver reached to within one inch of the umbilicus; the gall-bladder was distended and reached as far as 2½ inches below the umbilicus. There was no tenderness over the abdomen, and no ascites could be made out.

As the patient was rapidly running down, and operative procedure was the only form of treatment that seemed to me likely to benefit him, I advised cholecystotomy. He took some time to consider the question, but decided that if an operation had to be done it should be done in the Leeds Infirmary. No word was received from him until September 10, when he was much weaker and if possible more intensely jaundiced. The liver reached to the umbilicus and the gall-bladder had increased in size. An operation was performed with full antiseptic precautions, the incision being made in the linea semilunaris over the upper part of the distended gall-bladder, from which 30 oz. of clear fluid were removed. The tissues cut through presented a most unhealthy greenish colour. Very little bleeding occurred, except from the cut edge of the gall-bladder, and this was was arrested by pressure-forceps. No gall-stones could be felt, and careful exploration along the course of the ducts failed to detect the cause of the obstruction, for neither gall-stones nor tumour could be felt. The patient's temperature after the operation was perfectly normal during the first week; but on the second day oozing of blood from the lower edge of the opening in the gall-bladder occurred, and this was arrested by pressure-forceps as before. The dressings had to be changed, however, twice daily, owing to the continued oozing from the gall-bladder and the suture wounds, which at the time of operation had not bled in the slightest. This became so serious on the eighth day that the patient had an attack of syncope, and during my absence Mr. Littlewood, the resident surgical officer, tranfused the patient, using a saline fluid. This only gave temporary relief, and he sank exhausted on the ninth day, apparently purely from loss of blood. Food had been taken well ever since the operation; there had been no sickness, no abdominal

distension, no pain, no elevation of temperature, and absolutely no bad symptom except this constant oozing of blood. Ruspini's styptic, hamamelis, and other internal hæmostatics were fully tried without benefit, and the application of solid perchloride of iron to the bleeding points only produced temporary arrest of hæmorrhage.

The following notes are taken from the report of Dr. Barrs, hon. pathologist to the Infirmary. "The whole of the surface of the body was of a deep saffron colour. Emaciation to a medium degree. All the organs of the body bile-stained except the brain. Only slight adhesions had formed between the gall-bladder and the parietes. There was some slight blood infiltration of the parietes below the wound. There was no peritonitis, and no fluid or blood in the peritoneum. The gall-bladder with the opening into it was filled with a mass of coagulated blood; the walls of the gall-bladder were deeply stained with blood but were otherwise normal. A small director was easily passed without force through the papilla in the duodenum, and at once found its way into an immensely dilated common bile-duct, the calibre of which was as large as that of the small intestine. The cystic duct could not be discovered. The bile-ducts and liver were immensely dilated. The common duct was slit up, and the head of the pancreas was found to be involved in a dense, hard, fibrous mass. The pancreas presented a most remarkable appearance; in addition to the hard, fibrous condition of its head, the parts beyond were converted into a cavernous structure, clearly the result of obstruction to its duct; the whole organ was larger than natural, but there was no growth except the one in the head. There was no fungation or ulceration into the pancreatic ducts. The liver was much larger than natural, of a deep olive colour from jaundice. On microscopic examination the hard mass in the head of the pancreas was found to be scirrhus cancer."

Case 9. *Cancer of common bile-duct: jaundice: distended gall-bladder.*—Wm. T., æt. 42, a jet worker, was admitted into the infirmary under the care of Dr. Churton, suffering from jaundice, with a tumour in the region of the gall-bladder, and pain in the right side of the abdomen. He had not been very temperate up to the time of his illness, which began two years previously with an attack of hepatic colic. For eighteen months he had had frequent similar seizures, generally coming on soon after a meal, with shivering, nausea, vomiting, head-

ache, and acute pain in the epigastrium. He also became slightly jaundiced at each attack; the jaundice passing off in the intervals. The swelling in the abdomen had been noticed for twelve months. He had not had an attack of pain since May, but from that time he had always been jaundiced, and the swelling in the abdomen had been steadily increasing.

On admission he was thin and deeply jaundiced; the liver dulness began at the sixth rib, and extended to within half an inch of the umbilicus. In the middle of the edge of the right lobe, at the level of the umbilicus, was a smooth round swelling about the size of a hen's egg, giving an indistinct feeling of fluctuation. There was some tenderness over the liver in the epigastric region, but none over the tumour.

Dr. Churton asked Mr. Mayo Robson to see the patient, with a view to performing cholecystotomy, as he was rapidly running down, and suffered from fever with occasional rigors and sweating, all of which symptoms were suggestive of suppuration.

Operation (December 23).—After incising the parietes in the right linea semilunaris, the tumour was aspirated, several ounces of a brownish straw-coloured fluid containing pus-cells being removed. Very considerable hæmorrhage occurred during the dissection through the parietal wall, and much time was spent in ligaturing the bleeding points instead of applying pressure, as in the last case. The gall-bladder was incised sufficiently to admit the finger, and after exploration it was stitched to the abdominal parieties with fine catgut sutures. On exploring the cavity of the abdomen several hard nodules could be felt on the liver, and a good many adhesions; no stone could be felt in the bladder or bile-ducts. A drainage tube was introduced through the opening in the gall-bladder, and the abdominal wound closed with catgut sutures. The patient seemed relieved for a few days, the pain being less and the temperature lower; but although the wound did well and the drainage of the gall-bladder prevented any accumulation of fluid, after a few days the old symptoms returned—irregular pyrexia with chills and night-sweats—and his appetite did not improve. The sutures were removed on the seventh day, when the wound, except the opening into the gall-bladder, was healed.

There had been no hæmorrhage, no general abdominal distension, and nothing special except a little bronchial catarrh. He returned to the medical ward, and the old symptoms gradually brought about death by exhaustion on January 5.

Post-mortem report.—Liver not enlarged, surface smooth but dull, and presents a mottled appearance, darkish green alternating with light green. Here and there, clustered together, more particularly on the upper surface of the left lobe, are several dull white patches not raised above the surface. On section, these patches seem to be composed chiefly of thickened peritoneum; and the liver substance beneath is whiter and denser than in other parts; nothing noteworthy on the under surface of the right and left lobes. Pus present in the bile channels throughout the whole of the liver. Gall-bladder enlarged and its walls considerably thickened. There is a sacculus off one part, as if a stone had been lodged there; the cystic duct appears dilated, but its opening into the common bile-duct cannot be easily found. Both arms of the hepatic duct are much dilated, as also is the hepatic duct itself. At the junction of the hepatic duct with the cystic duct there is a large mass, about the size of a walnut, of new growth. Its attachments to the walls of the duct are very considerable, and there are several nodules springing (independent of the main mass) from the duct walls.

The common bile-duct rapidly becomes smaller in size beyond the cancerous mass, and the pancreatic duct and common bile-duct open into the duodenum by separate orifices.

Microscopically the growth was found to be a cylindrical epithelioma.

Case 10. *Dropsy of gall-bladder due to obstruction by gall-stones.*—Mrs. C., æt. 41, was admitted to the Infirmary, March, 1889, on account of a tumour in the right of the abdomen which had been noticed rather more than a month, although she had had dragging pain accompanied by nausea, whenever she exerted herself, for about six months.

She gave the history of having had frequent attacks of spasms more or less severe for several years. Although her general health was not seriously impaired, she said she was quite unable to perform her household duties on account of the dragging pain.

There was no jaundice and no history of her having had an attack.

The tumour, which was about the size of a swan's egg, oval, smooth, and slightly tender, moved up and down during respiration, and could be moved from side to side for several inches. A diagnosis of distended gall-bladder containing gall-stones was made, and operation advised.

March 28.—Cholecystotomy was performed, and after several ounces of straw-coloured fluid mixed with pus had been withdrawn, fourteen facetted gall-stones were removed from the cystic duct, the largest being the size of a small walnut, the smallest the size of a pea. Exploration within the duct by means of a long probe, and outside the duct by the finger in the abdomen, failed to discover any further obstruction. A drainage-tube was inserted into the gall-bladder after the cut edges had been sutured to the skin. Bile appeared on the dressing on the following day, the drainage-tube was removed on the sixth, and the sutures on the eighth day.

No bile was discharged after the ninth and the wound was perfectly healed on the thirteenth day after operation. The patient returned to her home well on the seventeenth day.

Case 11. *Frequent attacks of biliary colic: no tumour: removal of forty-two gall-stones: cure.*—Miss H., æt. 32, consulted me two years ago on account of attacks of so-called "spasms" which had distressed her frequently for six years. She had never been jaundiced, and until I saw her she had no idea of the nature of her disease, although she had frequently sought advice.

An examination of the fæces, made at my request after a rather severe seizure, resulted in the discovery of six facetted gall-stones. Despite careful dieting, the administration of Carlsbad water, and other treatment, the attacks recurred as frequently as before; and as her later seizures had not resulted in the passage of calculi, I suggested that there must be one or more large stones which would not pass; I therefore urged what I had previously mentioned as advisable, namely, that she should undergo an operation. Dr. Clifford Allbutt and Mr. Wheelhouse saw the case with me and gave the same advice.

On May 2nd, I performed cholecystotomy and removed forty-two gall-stones from the gall-bladder and cystic duct, the sizes varying between a No. 4 shot and a bean.

The suturing of the gall-bladder in this case is worth noticing, as I think the method may be of service in preventing a permanent fistula. The serous coat of the gall-bladder was sutured to the parietal peritoneum and the mucous coat to the aponeurotic layer of the abdominal wall, thus leaving the skin and subcutaneous tissue free to granulate and close the opening. The gall-bladder contained about two drachms of bile.

The drainage-tube was removed on the fourth day and the sutures on the sixth.

The temperature and pulse were normal throughout, and the patient was up at the end of a fortnight. A little bile was discharged through the fistula for six weeks, when it closed.

The patient has since been quite well, and has had no recurrence of pain.

CASE 12. *Cholelithiasis: no tumour: removal of seventy gall-stones.*—Mr. H., æt. 55, residing in Cumberland, was brought to see me by my friend Dr. Black, of Harrogate. He gave the history of having suffered from frequent and severe attacks of "spasms" for seven years. The attacks, which were usually so severe as to require the subcutaneous injection of morphia before relief could be obtained, were frequently followed by jaundice. During the past year the seizures had become so frequent that the patient said his life was scarcely worth living at the price. He had never been able to discover any gall-stones in the motions.

On examination in July, 1889, he had just recovered from an attack, and was slightly jaundiced. The liver seemed to be a little enlarged, but no distinct tumour could be felt. Cholecystotomy was advised as he had apparently tried all the usual remedies, including a course of treatment at Harrogate.

On September 7, 1889, cholecystotomy was performed. On opening the abdomen through the upper part of the right linea semilunaris, the viscera were found to be matted together, and the gall-bladder could not be seen, but could be felt as a hard lump lying under cover of the liver, with the omentum adherent over it.

With a little difficulty, the adherent omentum was separated, exposing a shrunken gall-bladder lying very deeply; this was incised, and from it and the cystic duct were removed about seventy gall-stones varying in size from a No. 5 shot to that of a small bean, the larger stones being impacted the farthest down the duct.

By packing sponges round, the soiling of the peritoneum prevented. With some considerable difficulty the parietal m was tucked down and sutured to the serous coat der, the mucous membrane being stitched to urosis. A drainage-tube was introduced and the rest of the wound brought

Bile appeared on the dressings on the third day, from which time it flowed freely until the beginning of the third week, when it gradually ceased. Recovery was uninterrupted, and Mr. H. returned home a month after the operation, there being only a button of granulations over the site of the wound. He had had no pain since the operation, and said that he felt in better health than he had done for many months.

CASE 13. *Cholelithiasis: no tumour: three gall-stones removed.*—Mrs. A. W., æt. 41, was sent to see me by my friend Dr. Swann, of Batley, with a view to the performance of cholecystotomy, as the patient had been suffering for twelve months from frequent attacks of "spasms" followed by jaundice, after one of which attacks facetted gall-stones were found in the motions. For some years there had been occasional attacks of "spasms" unaccompanied by jaundice.

On September 26, 1889, cholecystotomy was performed and three gall-stones were removed, the gall-bladder being drawn up and stitched to the surface. Bile commenced to flow from the time of the operation. The drainage-tube was removed on the third day, and the sutures were taken out on the seventh.

The patient recovered without a bad symptom, and the discharge of bile gradually diminished.

CASE 14. *Cholelithiasis: no tumour: twelve gall-stones removed.*—Mrs. F., æt. 34, was brought to see me by my friend Mr. Gerald Coleman, of Hemsworth, on September 10, 1889, with the history that she had been suffering from gall-stone attacks since October, 1881, and that during the first six months of the present year she had had no less than fifty-eight different seizures, the greater number of them having been followed by jaundice. In four years she had lost two and a half stones in weight. On two separate occasions she had resided for a time at Carlsbad, and had undergone the regular course of treatment, with no material benefit.

On examination no tumour could be felt, but, as the symptoms were so clearly due to gall-stones, operation was advised.

On October 10, 1889, cholecystotomy was performed, and a small gall-bladder, no larger than the last joint of the thumb was discovered, lying deeply below the margin of the liver, and stones could be distinctly felt through the walls of the cystic duct. The gall-bladder was therefore incised and twelve gall-stones were removed. The finger passed outside the

duct as far as it would reach, and a probe passed inside failed to discover other concretions. Now came the difficult part of the operation, for it seemed to be almost impossible to shut out the peritoneal cavity. This, however, was accomplished at the upper part, by bringing down the parietal peritoneum and suturing it to the upper border and sides of the wound in the gall-bladder; but the lower part of the opening it was found impossible to occlude in this way, as, owing to its depth and the friability of the gall-bladder, the slightest strain on the stitches caused them to tear away.

I therefore seriously contemplated having to perform cholecystectomy, but a piece of omentum bulging into the lower end of the wound suggested to my mind another plan, and that was to use the omentum as a plug, by stitching it around the wound in the gall-bladder and to the parietal peritoneum after the drainage-tube had been introduced into the gall-bladder. By this means the general peritoneal cavity was completly shut off, and the rest of the wound was closed by catgut sutures.

From the time of operation all pain ceased, and the patient's skin began to loose its icteric tinge.

The temperature never exceeded the normal, and the wound, except the drainage opening, healed by first intention.

The drainage-tube opening still discharges a little slightly bile-tinged mucus at the end of a fortnight. Mrs. F. says she is feeling better than she has done for a long time.

Remarks.—Each of the foregoing cases presents individual points of interest, although the fourteen may be broadly divided into two classes, simple and malignant; and the simple may be again considered in two series: in one cholecystotomy was performed in the presence of a distinct tumour capable of being felt through the abdominal walls; in the other, the operation was performed on the strength of certain symptoms which pointed to gall-stones, there being at the time an entire absence of physical signs. In the paper which I read in 1885, I remarked that there were many cases of frequently recurring biliary colic, without the presence of a tumour, where cholecystotomy would in future be adopted as a relief to suffering and as a preventive of the many dangers of cholelithiasis, such as biliary toxæmia, rupture of the ducts, suppuration, and ulceration into neighbouring cavities; and although I had not then performed the operation in such a case, I felt prepared to do it should the occasion arise. Although it was

suggested that there would be great difficulty in suturing a non-distended gall-bladder to the abdominal wall, the marked relief given in Cases 7, 11, 12, 13, and 14, would certainly encourage me to perform the operation in future, when the symptoms were defined and persistent, despite the absence of physical signs.

A vertical incision commencing at the ninth costal cartilage is employed, and on passing the finger to the under surface of the liver, there is no difficulty in finding the gall-bladder, nor in opening it and removing the gall-stones, the only difficulty experienced being in tucking down the parietal peritoneum to make it reach the opening in the gall-bladder to which it is sutured.

In Case 14, where this could not be done, a piece of omentum was drawn up and fixed between the parietal peritoneum and the lower edge of the opening in the gall-bladder, thus closing the general peritoneal cavity.

In the other group of cases, seven in number, there were two in which the gall-bladder was distended with clear fluid, the distension being due to organic stricture of the cystic duct caused by gall-stones; in three, the gall-bladder was also distended with clear fluid, but in these cases the distension was dependent on impacted gall-stones, whilst in one the cause could not be clearly made out, but was probably due to the contraction of bands of lymph outside the ducts.

The case of empyema of the gall-bladder (No. 3), was operated on at a time when the patient was extremely ill with peritonitis, and although there was jaundice, it was of quite recent date. The adhesions were so extensive and the parts were so matted together, that a careful exploration of the duct could not be made from within the abdominal cavity, although a probe was passed as far up the cystic duct as its junction with the common bile channel. Bands of lymph crossed the ducts, and may account for the complete blocking of the canal, and for the persistent biliary fistula. This patient during the fifteen months of the existence of her fistula, which I ultimately closed by cholecystenterostomy, willingly submitted herself to a series of observations which should help to throw light on the physiology of the secretion of the bile and on biliary therapeutics.

The second case of suppurating gall-bladder (Case 4) presents several points of interest. When the abdomen was opened, the tumour appeared to be perfectly solid, the omentum, stomach, gall-bladder, and liver forming a hard,

dense swelling. So much did it look like malignant disease, that I had almost decided to close the opening without further exploration, but on a second consideration, I decided to insert an exploring syringe, especially as my colleague Dr. Churton who was present, and who had diagnosed the case as one of gall-stones, said that he had seen cases in the post-mortem room looking much like this, where the disease was simply inflammatory. The first punctures over the centre of the hard mass only withdrew sanious fluid, but the second puncture through the thin edge of the liver revealed pus. The tissues between the gall-bladder and liver were so friable as to easily break down, and it was with some little difficulty that the pus was prevented from soiling the general peritoneal cavity; after two large gall-stones had been removed from the cystic duct, a great difficulty arose as to how this irregular friable opening was to be shut off from the peritoneum, as it was found that sutures would not hold; this was effected by inserting a rubber drainage-tube and packing the opening round it with aseptic sponges which were changed frequently.

In the fourth, fifth, and sixth cases large gall-stones impacted in the cystic duct were with difficulty removed, the operation being aided by forceps within the duct grasping the stone and by the fingers within the peritoneal cavity gradually working the stone forward.

In three cases out of the fourteen a fistula remained, but in the others the wound healed kindly. The fistula in the first case was ultimately cured by removal of the gall-bladder; in the second case the discharge of clear fluid gives so little trouble that the patient does not think it worth while to have a further operation; in the third case, the biliary fistula has been cured by cholecystenterostomy. With regard to the danger of biliary fistula, Mr. Lawson Tait remarked "that biliary fistula after cholecystotomy can only be present when the operation happens to have been performed at a time when a gall-stone was impacted in the common duct." I believe this to be generally true, as proved by Mr. Tait's cases, but in the only case of biliary fistula which has followed the operation in my own hands the cause was apparently other than gall-stones as on performing the operation for closure of the fistula I carefully examined the common duct, and could find no obstructing calculus.

In the malignant cases, which were accompanied by intense jaundice, the obstruction in Case 8, not only of the common bile-duct but of the pancreatic duct, was dependent on scirrhus

of the head of the pancreas. In this case death occurred in the second week, being due to hæmorrhage from the interior of the gall-bladder and from the suture openings; but there was no sign of septic trouble or of peritonitis. The case forcibly illustrates the danger of operating in the presence of persistent jaundice, and bears out the observation made by Mr. Lawson Tait, that where there is persistent jaundice there is always a strong suspicion of malignant disease. In this example the sudden onset of the pain which was immediately followed by jaundice, and the persistent slowness of the pulse, led one to believe it to be a case of cholelithiasis and not of cancer.

In Case 9 the cause of the obstruction, "malignant disease, growing into the common bile-duct and distending it," is of very great pathological interest; and the question arises, Can the growth have been originally due to the irritation of gall-stones? Although operation did not prolong life materially, it gave some relief, and the patient gradually succumbed to the original symptoms, three weeks after the cholecystotomy had been done.

It is interesting to note that, although the jaundice was as intense as in Case 8, there was no hæmorrhage, either at the time or afterwards. In this case all bleeding points were ligatured, and pressure-forceps were not employed; this, I believe, explains the different course of events.

Strict antiseptic precautions were observed in all the operations, and in no case did any anxiety arise from distension, pain, or other untoward symptom. Sedatives were not required, and all the patients who had not malignant disease made uninterrupted recoveries.

I fear that in entering into details my paper has assumed too great a length, but I feel that it is only by a detailed description that such a paper can be of any service to those who have to attack similar cases; and this must be my excuse for a want of brevity.

In conclusion, it seems to me that with due care cholecystotomy, in the absence of malignant disease, is a procedure attended with comparatively little danger, and that the great relief which the operation confers amply compensates for the attendant risk.

Table of Cases of Cholecystotomy performed by A. W. Mayo Robson.

No.	Name and age.	Hospital or private.	Physician or ordinary medical attendant.	Nature of case.	Previous history.	Date of operation.	Operation.	Result—R., recovd. from oper. D., died.	Subsequent history.
1	Mrs. B., 33	P.	A. W. M. R.	Gall-stones and stricture of cystic duct, tumour	Several years' pain and discomfort, never jaundiced; tumour two years; ultimately size of large pear.	June, 1884	Aspiration of gall-bladder and removal of several ounces of clear fluid; incision of gall-bladder and removal of eight gall-stones; suture of gall-bladder to skin, and drainage	R.	Good health since; small mucous fistula persists.
2	Miss H., 22	H.	Dr. Churton	Gall-stones, stricture of cystic duct, tumour	Several years' persistent pain, with attacks of "spasms;" no jaundice; tumour some months.	Feb., 1885	Operation similar to Case 1. Sixty white gall-stones removed.	R.	Mucous fistula persisted, and was cured by cholecystenterectomy.
3	Mrs. B., 42	H.	Dr. Loe, Leeds	Empyema of gall-bladder and acute peritonitis	Removal of pyo-salpinx one year previously; good health up to one week before admission; acute peritonitis without apparent cause one week; tumour noticed few days.	Jan., 1888	Abdomen opened and 8 oz. pus removed from gall-bladder, which was sutured to skin and drained.	R.	Biliary fistula for 15 months, cured by cholecystenterostomy.
4	Mrs. G. B., 40	H	Dr. Churton	Gall-stones, abscess in and around gall-bladder, tumour.	Thirteen years' history; twice jaundiced; pains for two months with tumour.	May, 1888	Tissues and organs surrounding gall-bladder matted together; tumour apparently solid; exploring syringe revealed pus; two large gall-stones removed from cystic duct; one crushed before removal; cavity drained after	R.	Cure; no fistula.

							washing out with salufer lotion; gall-bladder too friable and indistinct to be sutured to skin.		
5	Mrs. J., 40	H.	A. W. M. R.	Gall-stones, tumour.	Two years' history; dragging pains and "spasms."	July, 1888	Operation similar to Case 1. Three gall-stones removed.	R.	Cure; no fistula.
6	Mrs. A. H., 42	H.	Dr. A. Atkinson, Leeds	Gall-stones, tumour.	Nineteen years' history; frequent attacks of "spasms" and jaundice.	July, 1888	Operation similar to Case 1. Two gall-stones size of walnuts removed: one from gall-bladder, one from cystic duct.	R.	Cure; no fistula.
7	Mrs. S. G., 49	H.	Dr. Horn, Barnsley	Gall-stones, no tumour.	One year; numerous attacks of "spasms," each followed by jaundice.	Aug., 1888	Incision vertically from 9th costal cartilage; small gall-bladder crowded with gall-stones; 66 removed from gall-bladder and cystic duct; gall-bladder with difficulty sutured to parietal peritoneum; drained for a week; healed within month.	R.	Cure; no fistula when last seen.
8	Thos. B., 50	H.	Dr. Clifford Allbutt	Cancer of head of pancreas, tumour	Dyspepsia 12 years; sudden pain 9 months previously, followed by persistent jaundice, distension of gall-bladder, and great enlargement of liver; loss of flesh.	Sept., 1888	Thirty ounces of clear fluid removed by aspirator, and gall-bladder opened and drained; no gall-stones found; no serious bleeding at operation; bleeding points seized with pressure forceps; tissues had very unhealthy appearance; oozing of blood commenced on second day from suture wounds and from interior of gall-bladder, and continued, despite use of styptics, &c., until eighth day; transfusion temporarily relieved.	D.	Autopsy; no peritonitis; scirrhus cancer of head of pancreas blocking both common bile-duct and pancreatic duct.

No.	Name and age.	Hospital or private.	Physician or ordinary medical attendant.	Nature of case.	Previous history.	Date of operation.	Operation.	Result—R., recovd. from oper. D., died.	Subsequent history.
9	Wm. J., 42	H.	Dr. Churton	Cancer of common bile-duct, tumour, empyema of gall-bladder.	Two years' frequent attacks of colic, followed by jaundice; tumour 12 months; jaundice 7 months; fever and slight rigors several weeks; emaciation.	Dec. 23, 1888	Several ounces of brown purulent fluid removed by aspirator; gall-bladder opened, drained, and stitched to skin; no gall-stones found; bleeding points ligatured; recovered from operation, but died a few weeks afterwards from asthenia.	R.	Cylindrical epithelioma at junction of hepatic, cystic, and common bile ducts.
10	Mrs. C., 41	H.	A. W. M. R.	Gall-stones, tumour.	"Spasms" for several years; no history of jaundice; tumour size of large pear.	Mar. 28, 1889	Operation similar to Case 1. Four ounces of fluid removed from gall-bladder, straw-coloured, mixed with pus; 14 gall-stones removed, largest size of walnut.	R.	Cure; no fistula.
11	Miss H., 32	P.	A. W. M. R.	Gall-stones, no tumour.	"Spasms" 6 years; no jaundice.	May 2, 1889	Gall-bladder quite small; 42 gall-stones removed from it, and from dilated cystic duct; visceral peritoneum sutured to parietal peritoneum, and mucous membrane of gall-bladder to aponeurotic layer.	R.	Cure; no fistula.
12	Mr. H., 55	P.	Dr. Black, Harrogate	Gall-stones, no tumour.	Frequent "spasms," followed by jaundice; 7 years.	Sept. 7, 1889	Small gall-bladder sutured to parietal peritoneum with difficulty; 70 gall-stones removed.	R.	Patient has gained weight, and is apparently well in every respect.

13	Mrs. W., 41	H.	Dr. Swann, Batley	Gall-stones, no tumour.	Seven months' history of frequent "spasms," followed by jaundice.	Sept. 26, 1889	Small gall-bladder; 3 gall-stones removed.	R.	General health good; no pain since operation.
14	Mrs. F., 34	P.	Dr. Gerald Coleman, Hemsworth	Gall-stones, no tumour.	Gall-stone attacks since Oct., 1881; 58 seizures in first six months of 1889; jaundice usually followed attacks; two months at Carlsbad with rigid treatment did no good.	Oct. 10, 1889	Very small gall-bladder, no larger than last joint of thumb, hidden under the liver, and with difficulty reached; 12 gall-stones removed from cystic duct; as the gall-bladder could not be brought to the surface except at the upper end of the incision, a plug of omentum was brought up and fixed in position so as to shut off the general peritoneal cavity; a drainage-tube was left in the gall-bladder	R.	No pain since operation.

II.—*A case of Pott's Fracture with fracture of the astragalus, followed by symptoms of tetanus, which subsided after removal of the displaced fragment.* By WALTER RIVINGTON. *Read November* 8, 1889.

THOMAS S., æt. 27, labourer, fell from a scaffolding to the ground, a distance of about fourteen feet, on October 25, 1887. Being unable to rise, he was picked up and conveyed to the London Hospital, where he was admitted as an in-patient. He had a lacerated eyebrow and a Pott's Fracture on the left side, the inner malleolus being broken off and apparently displaced. The limb was put upon a splint and between sandbags, whilst an icebag was applied to the foot. Great swelling of the part supervened, followed by suppuration and breaking down of the tissues in front of the ankle-joint. Ultimately this destructive process resulted in the exposure of a fragment of bone, as to the identity of which some doubt at first prevailed, but which the sequel showed was the astragalus broken and displaced. This was the course of events up to November 20, when the patient became feverish and vomited several times. The next day the temperature rose to 105°, and a red blush with a well-defined margin extended over the foot and half way up the leg. The tissues over the displaced bone were beginning to slough. The patient did not complain of much pain in the limb, but said that his head felt very bad. He was removed to the erysipelas ward, and it was intended as soon as the erysipelas had subsided, to explore the ankle and remove any loose or displaced fragments. On Thursday, November 24, my House Surgeon, Mr. Thomas, came across to me at the Medical College at the conclusion of my surgical lecture, and asked me to come and see the patient, as he exhibited symptoms of commencing tetanus. I found that there had been some stiffness about the muscles of the neck and jaw, with slight twitching of the facial muscles; that the patient exhibited a *risus sardonicus,* and that the abdominal muscles, especially the recti, were hard and rigid. As the tendons and tissues around the ankle-joint were evidently in a state of tension, and a free exit for discharge was desirable, I had the patient placed under an anæsthetic and enlarged the wound in front of the inner malleo-

lus. I then ascertained that the astragalus was displaced and twisted, so that the trochlear surface articulating with the tibia looked forwards, and was lying close to the skin. It was readily removed with lion forceps, and proved to be not the entire astragulus, but the whole of the bone with the exception of the calcaneal articulating surface. The body of the bone had been fractured transversely below the lateral facets. As the remainder of the bone was *in situ,* I did not think it necessary to remove it.

The cavity was well washed out with an antiseptic lotion and iodoform dusted into it. On the 25th there was little suppuration. The erysipelatous blush extended six inches above the inner ankle, and had a well-defined margin. The pulse was small, hard, and 140; the respirations 48. Twitching of the facial muscles was well marked, and most pronounced when the patient attempted to speak. He could open his mouth, and there was no rigidity of the muscles of the neck.

The *risus* was disappearing and the hardness of the abdominal muscles was not so noticeable. Twitching of the facial muscles ceased on the 28th, and the temperature, pulse, and respiration were falling. On December 5 he was considerably better; there was very little redness about the leg, and the œdema and swelling had diminished. Some discharge continued. On the 18th the temperature was normal, all redness and œdema had gone, and the wound was granulating. On January 11, 1888, the wound had almost healed, and the general health was good. A gum and chalk stocking was applied to the leg. On January 28 the patient was discharged. When seen some weeks later he had a useful foot.

Remarks.—Displacement of the astragalus appears to have an aptitude for occasioning tetanus. Mr. Bryant states that "in 1845 Mr. Key amputated a leg on account of tetanus which had appeared six days after an unreduced dislocation of the astragalus; the symptoms disappeared at once after the operation. On dissecting the foot, the posterior tibial nerve was found to have been put violently on the stretch by the projecting astragalus."* After referring to this case, Mr. Holmes observes: "I have seen at least one similar case."† If this means that amputation of the leg for tetanus following after a dislocated astragalus saved at least one other patient, it indicates that tetanus occurring under such circumstances is much more amenable to removal of the source of irritation

* *Manual of the Practice of Surgery,* vol. i, p. 297.
† *Surgery, its Principles and Practice,* 5th edit., p. 74.

than it usually is when resulting from other traumatic causes. Like most surgeons of experience, I have frequently seen active measures like amputation, nerve-section, nerve-stretching, and local measures fail.

The possible causes of tetanus comprise nerve-irritation, nerve-tension, nerve-inflammation spreading to the spinal cord and medulla, tension of muscles, and blood poisoning. Displacement of the astragalus stretches both the muscles round the ankle-joint and the nerves, especially the posterior tibial. That tension of muscles occasions muscular contraction is shown by the phenomenon of ankle-clonus, but such contraction would appear to be limited to the muscles directly implicated, and the irritation, so far as I know, cannot be propagated to the voluntary muscles generally. We may therefore exclude it as a cause of tetanus in displacement of the astragalus. Nerve tension seems to be a more probable cause, and, if it be admissible as the cause here, there would be reason to believe that the variety of tetanus thus produced is of that slowly culminating or chronic kind which supplies the recoveries from this dangerous affection. This would account for the symptoms disappearing so readily after amputation or excision.

At the same time the condition of the parts in my own case was quite compatible with the symptoms being due to absorption of some alkaloidal substance of a poisonous nature, the excision of the astragalus allowing of thorough cleansing and drainage of the wound. The close resemblance of tetanus to poisoning by strychnia, and the symmetry of the spasms are more readily comprehensible on this theory than on that of unilateral nerve tension or nerve irritation or inflammation propagated to the spinal cord. Moreover, the observations and experiments of surgeons and pathologists, both abroad and in this country, are all but conclusive that tetanus is due, either directly or indirectly by the production of ptomaines, to the agency of a special micro-organism. Excision of the displaced bone in a case of tetanus, if practised quite early, seems to me to be preferable to amputation, as it leaves a useful leg and foot; but when the disease is fully established it may perhaps be considered safer to perform amputation. I have performed excision of the astragalus in several traumatic cases with excellent results.

III.—*A case of recent dislocation backwards, at the elbow of both bones of the forearm, irreducible from the lower end of the humerus being held, like a button, by a rent in the anterior ligament.* By W. G. Spencer. *Read November* 8, 1889.

A. H., a boy æt. 10, was knocked down by a carriage in the street, on October 25, 1888. Mr. J. J. Oakman, of Battersea, saw the patient before any swelling had taken place, and found a dislocation of both bones backwards at the left elbow. He tried reduction without and with chloroform; and after a week, on October 30, he tried again under chloroform, using a considerable amount of force.

On October 31 Mr. Oakman brought the boy to Westminster Hospital. The elbow was swollen, the limb slightly flexed and semi-pronated, without active movement at the elbow and with scarcely any passive movement. I tried reduction under chloroform both by Astley Cooper's method* and then by that of Liston,† except that with the latter the patient was supine and not prone. The bones appeared most firmly fixed. The greatest amount of force used was that of two dressers pulling one way and two making counter-extension. It seemed to me that further force would cause the lower epiphysis of the humerus to separate. Considerable force had also to be applied to flex the limb at all, and before it came up to a right angle, a small crack was felt over the olecranon, which I found at a later stage to have resulted from an incomplete fracture at the epiphysis of the olecranon.

After two weeks in bed the swelling had gone, the joint was fixed at an angle of about 150°, without active or passive movements, and my colleagues agreed with me that if left alone the limb would be useless.

On November 13, three weeks after the injury, I made a vertical incision into the joint through the triceps, above the tip of the olecranon, with the idea that if the head of the radius were grasped by a band I might divide it with a blunt-topped bistoury. Having found nothing, the periosteum was raised and the olecranon cut off. The head of the radius was quite

* Cooper, Sir Astley, *Dislocations*, 1822, 1st edit., p. 468.
† Liston, *Practical Surgery*, 1846, p. 120.

free, rotating easily in the lesser sigmoid cavity; it did not appear to be fixed in any way against the back of the external condyle; the head had pushed before it the orbicular ligament without perforating it. The ulna was firmly applied to the back of the humerus; the beak at the lower end of the great sigmoid cavity was not wedged into the olecranon fossa, but the coronoid process was held firmly against the back of the trochlea, and no attempts at reduction made by my assistants moved it. The rest of the sigmoid cavity, including the beak at the lower end, was cut off, and a ligamentous band then appeared to view, stretching across the back of the humerus at the level of the olecranon fossa, the band being attached at its middle to the front of the upper part of the coronoid process. When my assistants made attempts at reduction by Astley Cooper's and Liston's methods, the band fixed the ulna more tightly to the back of the humerus; on pushing the extended forearm upwards, in the longitudinal axis of the arm, the band became looser, and by using an elevator passed under the band as a lever with the fulcrum on the trochlea, the band was raised and pushed over the lower end of the humerus, and so the dislocation was reduced. The finger could now be passed to the front of the humerus, owing to the removal of the great sigmoid cavity; the band evidently formed part of a horizontal rent in the anterior ligament. The external and internal condyles had not yet fully developed the prominences they have in the adult.

The limb was put on a rectangular splint, and the wound, as far as any communication with the joint was concerned, closed by first intention. The centre of the skin incision over the former position of the olecranon gaped a little, and healed by second intention. Passive movement was commenced after three weeks, but after the boy left the hospital his parents did not keep up active and passive motion. He came back on three several occasions with the forearm semi-extended; on the first two, the limb was moved freely under gas; on the third, the arm was flexed on a rectangular splint; and when seen after two months, the elbow was at a right angle with movement through about forty-five degrees.

Cadaveric experiments.—Two procedures have been employed to produce this dislocation on the dead body.

1. Roser* used over-extension of the forearm on the arm. The radius was found to separate from the capitellum, and move backwards. The olecranon process of the ulna formed

* Roser, *Archiv f. Physiologische Heilkunde*, 1844, p. 185.

the fulcrum of a lever, which separated the trochlea from the great sigmoid cavity. Flexion, combined with a slight pressure upwards of the forearm, then produced the dislocation backwards, for the head of the radius lodged behind the capitellum, and prevented the ulna from slipping into its place again, as it otherwise might do. By this method the lateral ligaments are stretched, and if great violence is used they may be completely ruptured. The anterior ligament is also stretched on hyper-extension, and may tear transversely with the anterior fibres of the internal lateral ligament. The orbicular ligament is more likely to escape being torn. Some of the fibres of the brachialis anticus may be torn when much force is used. In some experiments the lower end of the humerus has caused some difficulty in reduction by passing through a rent in the anterior ligament.

2. Malgaigne* produced the dislocation by abducting the forearm, so as to rupture the internal lateral ligament, and then rotating inwards. But I think that it is a general opinion that the method employed by Malgaigne produces primarily a lateral dislocation, and that the posterior dislocation is consecutive.

Accidents causing the dislocation.—(1) Falls on the hand, *i. e.* the same mechanism as the production on the cadaver by over-extension; (2) falls on the elbow and the inner side of the forearm. Malgaigne supported this view, and illustrated the mechanism by the experiments above mentioned. The case† is recorded of a man going down into a cellar, holding a glass in his hand; he fell and dislocated the elbow corresponding to the hand which continued to hold the unbroken glass.

Direct violence has produced the dislocation, a blow on the front of the upper third of the forearm, a kick on the back of the humerus, especially when the hand and forearm are fixed.

In either case, whether by a fall on the hand or on the elbow and inner side of forearm, the dislocation may be regarded rather as one of the lower end of the humerus forwards. Bichat‡ has thus described the humerus as a lever of the first order, the force being applied at the head, the fulcrum being the olecranon, and the capsule and the tendon of the brachialis anticus the resistance. The weight of the body acts as the force and carries the head of the

* Malgaigne, *Traité des Fractures et des Luxations*, 1855, t. ii, p. 573.
† Ringaud, *Dict. Encyclop. des Sciences Médicales*, Paris, 1878, p. 486.
‡ Bichat, *Dessaults Œuvres Chirurgicales*, Paris, 1813, t. i, p. 384, note.

humerus downwards and backwards, consequently the lower end of the humerus passes forwards and upwards.

I have not found any other case recorded in which the irreducible character of a recent dislocation of both bones of the forearm backwards has been ascribed to the cause which existed in this case. Hamilton, Liston, and others have mentioned cases in which no force could cause reduction, but the actual hindrance remained unknown because the unreduced limb was allowed to become fixed in that condition at a right angle. Compound dislocations have been examined, but from the severity of the injury all the ligaments have been, for the most part, torn, and no obstruction to reduction has been present.

A case* under Prof. Michaux, of Louvain, is the nearest approach to mine which I have met with. A man of 18 fell on his hand and sustained a simple dislocation of both bones outwards; after the first attempt at reduction it became a backward one. Repeated and forcible attempts at reduction were made. Signs of gangrene appeared on the third day after the accident, and amputation was done on the ninth day. The radial pulse had been felt on the first day, but not after the attempts at reduction. The tendons of the brachialis anticus and biceps were behind the external condyle. The radial artery and median nerve were likewise behind the external condyle, and both were ruptured. The lower end of the humerus was close under the skin in front.

Conclusion.—In this case, therefore, both Cooper's and Liston's methods of reducing a recent backward dislocation tightened the rent in the anterior ligament by which the lower end of the humerus was grasped, and any greater force would probably have torn off the lower epiphysis of the humerus.

No subcutaneous tenotomy, such as was employed by Dieffenbach, Liston, and Maissonneuve could have reached the hand.

When a dislocation has proved irreducible, the limb has been fixed with the forearm at a right angle to the arm, and a fairly useful limb has been obtained. Active treatment was indicated in this case because the limb was extended, and when an attempt to bring the elbow to a right angle was made the olecranon partly fractured. There did not seem to be any reason for removing the lower end of the humerus, which had yet to grow. Doubtless movement would have

* Debruyn, "Mémoire sur les Luxations du Coude," *Annales de la Chirurgie.* 1843, t. ix, p. 66.

been more free, but as it was, there was movement to the full extent at first, if passive and active motion had only been persisted in.

The undeveloped condition of the condyles caused the lower end of the humerus to have less breadth, compared with what is found in the adult, and thus suggests how the lower end of the humerus could pierce the anterior ligament without tearing it completely.

The patient was shown to the members of the Society.

IV.—*A case of Paroxysmal Methæmoglobinuria.* By E. A. Barton. *Read November* 8, 1889.

SINCE Dr. Stephen Mackenzie's admirable paper on Paroxysmal Hæmoglobinuria, published in the *Lancet* four years ago, additions to the number of cases of this kind have been so few that the following may not be devoid of interest. I am indebted to Dr. Ringer for permission to publish the case.

C. M., æt. 39, formerly in the army, came to the University College Hospital complaining of passing bloody urine at intervals with shivering. He was born at Malta, came to England when 6 years old, enlisted at 14, and went to Ireland. At 21 he went to India, and was stationed in the Central Provinces, where he had dysentery and ague. At 29 he went to Burmah, returning to India at the age of 33, to a hill station where his first attack came on.

There is a history of primary and secondary syphilis, and many of the recorded cases appear to have suffered from ague or syphilis. He was also in Madras Lunatic Asylum. There is nothing in the family history bearing on the disease.

In describing his first attack he says he was out walking with some friends, the season being cold, and getting heated with walking he sat down to rest, when suddenly he began to shiver, his fingers turning blue and cold, and his face became pinched, so that his friends remarked his aspect. The shivering commenced with numbness in the feet and legs, followed by a feeling of intense cold in the lower extremities, gradually creeping up to the trunk and lasting an hour. He experienced during this time shooting and stabbing pains in the lumbar region. He thought he was having another attack of ague, as the shivering was precisely the same. After an hour he got up and walked home without assistance, and while going home he passed some "black" urine. When he got home he went to bed, where he fell into a perspiration, and after having passed some more dark urine he fell asleep for a few hours, and woke feeling quite well. A few days afterwards he had another attack, commencing and ending in a

precisely similar manner. He says that he never has an attack without exposing himself to cold, that he nearly always sweats afterwards, and that the attack is more severe if he does not sweat. The fits seldom last more than twelve hours, but on one occasion they lasted for two days. Those which occurred while under observation did not last nearly as long, usually about six hours. Each had much the same character, commencing with numbness in feet and legs extending to trunk, pain in the back, and shivering. This was followed by the passage of a small quantity of very dark urine. He then felt drowsy and went to bed, where he sweated, but not very profusely, and after a few hours' sleep he woke feeling quite well.

All his organs were healthy except for slight enlargement of the liver.

He went out for a walk early in the year, his urine before doing so being normal in all respects. On his return to the hospital after about two hours his face was drawn and pinched, his hands blue and quite cold; his temperature under the tongue was 97·2°; pulse 88, regular, weak, and very compressible. He went to bed, and falling into a perspiration slept for a few hours.

When he returned he passed a small quantity of very dark urine, deep red by transmitted light. On standing a thick chocolate-coloured sediment fell, consisting of hyaline casts in great abundance with an amorphous deposit. No oxalates or blood-corpuscles were present. On boiling, the urine threw down about half albumen; the urea was 2 per cent.

The spectroscope showed, on diluting the urine with four times its bulk of water, three bands, one in the red and two between D and E. In every attack that has been observed the urine has shown the same three bands. After about six hours the urine became normal in quantity, and free from colour and albumen.

Some four or five attacks have occurred while he has been under observation, and the following phenomena with regard to the urine were noted.

On one occasion, at the very commencement of the shivering, some urine was passed, and from its appearance it was inferred that there was no blood-colouring matter present, the colour of the urine being that of dark sherry. This urine on boiling threw down a large quantity of albumen, quite out of proportion to any colouring matter that might have been present. This would tend to show that albumen is present in

the urine before the colouring matter escapes. Another noticeable fact was that the more severe the attack the smaller the quantity of urine passed, and the deeper the colour, the quantity, however, becoming normal in proportion to the gradual disappearance of the colour; also that after the fit the urine was unusually light coloured, and of low specific gravity (1007).

A specimen of the patient's urine was sent to Dr. Halliburton for examination; he examined the urine a few hours after it was passed, and his report is as follows:

"Urine passed during fit, acid, brownish colour; examined spectroscopically it shows the typical bands of methæmoglobin. Careful comparison of this specimen with the somewhat similar bands of acid hæmatin showed that the bands were undoubtedly those of methæmoglobin. Moreover, the addition of ammonium sulphide caused the bands to be replaced by those of oxyhæmoglobin, which again were quickly replaced by those of reduced hæmoglobin. Boiling the urine caused a dense precipitate of proteid; the addition of alcohol caused a similar precipitate. In each case the precipitate was much more abundant than could be caused by the methæmoglobin present. The urine was neutralised and saturated with magnesium sulphate; a small amount of proteid was precipitated (globulin), which carried down with it the greater part of the pigment. This was filtered off, and the filtrate contained an abundance of serum albumen."

A specimen of urine was sent to Dr. MacMunn. He reported that the specimen of urine contained methæmoglobin, to which all its colour was apparently due; that he found this to be the case in all so-called cases of intermittent hæmoglobinuria; that every specimen examined for that disease gave the same result.

On many occasions blood drawn from the finger and examined carefully under the microscope showed very small tendency to the formation of rouleaux. The corpuscles varied in size considerably, and appeared to be soft and gelatinous, so that they adhered to one another.

Boas made the experiment of tying a ligature round a finger and immersing the finger in ice and water for ten minutes, so as to imitate locally what occurs generally during an attack. On examining the blood of the patient's finger so treated he found that the corpuscles had no tendency to form rouleaux, and that the corpuscles were markedly irregular. He also observed many blood-flakes of a dark brown colour.

In common with other observers we got, in the blood of a finger subjected to the above process, the absence of rouleaux, the tendency of the corpuscles being to form clumps. The irregularity in shape of the corpuscles was also marked, as was also the softness and stickiness of the corpuscles. We failed to observe any blood-flakes or crystals. I am unable to find any observations on the white cells in this disease. In the specimens examined they were found to be small in size, frequently smaller than the red. The effect of a meal on the number of white cells was also investigated, and the relative increase was found not to differ from that in a healthy person —that is, the number of white cells reach their maximum half an hour after a meal, when their number is nearly double. (Gamgee.)

With other methods of treatment chlorate of potash was given in gradually increasing doses, the time of administration being strictly from 9.30 to 12 midday, until he took ℥ss in the time. On another occasion two four-grain doses of nitrite of sodium were given with half an hour's interval, but in neither case was the urine or blood or patient obviously affected. Nitro-glycerine tablets of gr. $\frac{1}{100}$ were tried, and the patient took on one occasion twenty-eight, or more than a quarter of a grain, in two and a half hours, without obvious effect on urine or blood.

The patient was finally put on arsenic, and seemed to get some relief, the attacks not being so frequent, but this may have been owing to the weather becoming warmer as summer came on.

It will be seen from the case just cited that it agrees for the most part with the previously recorded cases, differing only in a few peculiarities, and the question arises, where does the change occur? In the experiment of Boas, where he cooled a finger of the patient in ice, he produced a condition locally simulating that which occurs generally during an attack. This would tend to show that the change occurred in the blood, and not in the kidneys. In some cases blood-corpuscles are found in the urine, and it is not easy to see how they get there. Can damaged corpuscles pass through normal vessels, or does the free colouring matter in the blood irritate the kidneys, like substances, as cantharides, producing congestion, and so escape of red corpuscles?

In some cases, again, oxyhæmoglobin is found as well as methæmoglobin, and I would suggest that where destruction of corpuscles is extensive and rapid, sufficient time does not

elapse for the complete conversion of the oxy- into methæmoglobin, the oxyhæmoglobin escaping as such; but under other circumstances, where the destruction is less rapid, the whole of the colouring matter becomes converted into methæmoglobin.

V.—*A case of Pyloric Gastric Ulcer, with an epigastric systolic thrill; death following hæmatemesis.* By SIDNEY MARTIN, M.D. *Read November* 22, 1889.

THE following case of gastric ulcer is of clinical interest owing to the presence during life of a very fine systolic thrill over a limited area in the epigastrium, associated with well-marked visible pulsation in that region.

The patient, James M., æt. 42, a police constable, was first seen by me on September 6, 1889, in the out-patient room at the Victoria Park Chest Hospital. He then gave the following history.

He was quite well up to November, 1888 (eleven months before death), and was at work till January 31, 1889. In November he was suffering from what a doctor told him was "gastritis," the chief symptom being severe pain in the epigastrium on the left side half an hour after meals. The pain was caused by both solids and liquids; it was relieved, with eructations, by warm drinks. He vomited once, viz. on January 8. He had never had hæmatemesis.

He became very weak and thin, having lost two stone since March, 1889. Since the commencement of his illness he has had chiefly liquid food.

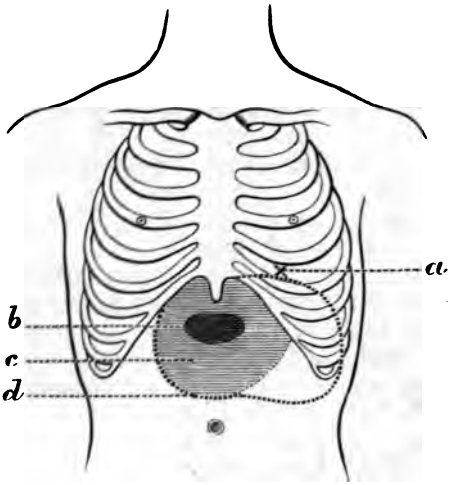
Previous illnesses.—Ague at Fulham seven years ago; five or six attacks, accompanied "with rheumatism." Rheumatic fever when eighteen years old.

Present state (September 6, 1889).—When first seen he was a tall, well-built man, thin, pale, and haggard-looking, with an expression as if he suffered habitual pain. He was very intelligent, and had been a careful student of his symptoms. He complained chiefly of a gnawing, sinking pain in the epigastrium, also going round the lower part of the chest. The pain was continual, and usually worse after food had been taken, although it was relieved by warm milk. Appetite good. Tongue coated behind, pale, tremulous. There was great flatulence, but no acid eructations, and he had formerly suffered only occasionally and slightly from this symptom. The bowels were irregular, very costive up to ten weeks ago. He has piles, which used to bleed. He has now a pricking pain on passing a motion. No melæna.

Physical signs.—Chest: There was a localised apical systolic murmur with a coarse thrill. The apex-beat was in the fifth space inside the nipple, and the impulse was heaving in character. There were no other morbid signs in the chest.

Abdomen: There was visible and violent pulsation over near the whole of the epigastrium, but the pulsation was not

FIG. 1.



a. Apex-beat: systolic murmur, localised; coarse systolic thrill; heaving impulse. *b.* Area over which was felt a fine systolic thrill. *c.* Area of visible pulsation. *d.* Area of dilated stomach.

expansile. There was some fulness and resistance in this region, and deep tenderness above the umbilicus. Just below the ensiform cartilage there was a transverse oblong area, over which could be felt an exceedingly fine thrill, synchronous with the cardiac systole (see Fig. 1). As regards the fineness of the thrill, the only sensation to which I can compare it is a hydatid thrill. There was no murmur heard over the epigastrium. The stomach was dilated.

The pulse was 128, full and regular, the radial tortuous, when examined in the out-patient room. When the patient was quiet in bed it was 100, and of the same character.

The urine contained no albumen, but an excess of phosphates.

The patient was admitted into the hospital under Dr.

Eustace Smith on September 23, 1889. The physical signs were the same as on September 6, and the temperature was subnormal. While in the hospital the patient had two attacks of hæmatemesis, one on September 28 (eleven days before death) of 14 oz. of dark blood, and another on October 1 (eight days before death) of 18 oz. of black blood. After the first attack the temperature rose from 97·4° in the morning to 100° at night, from which it gradually fell to 98° in four days. After the bleeding a systolic murmur was heard over the epigastrium. The patient became partially collapsed, stimulants rousing him somewhat, but the collapse gradually increased, and became suddenly worse after the second attack of hæmatemesis. The patient never rallied, and died on October 8.

Post-mortem, eighteen hours after death.—Rigor mortis was well marked. No cadaveric lividity. Body emaciated. Pleuræ normal. Lungs slightly œdematous; œdema of the left lower lobe. Heart was small, weighing 8 oz. The pericardium was normal. Mitral valve slightly thickened generally, especially along free margins. Chordæ were thickened; some of the chordæ of aortic flap were bound down to the wall of the ventricle by a tough adhesion. Aortic valves were fenestrated at the junction of the cusps, and were generally thickened, especially in the corpora Arantii.

Œsophagus was normal. Stomach not greatly dilated, full of an opalescent liquid with some curds; no blood. The stomach was slightly adherent behind. The pyloric end was puckered, and showed a saccular pouch near the pylorus about the size of a Tangerine orange. The pylorus felt thickened. On opening the stomach a large winding ulcer was seen occupying the pylorus near the orifice into the duodenum. It was 3½ inches long, and extended from the stomach for about 1½ inches into the duodenum. The edges of the ulcer were thickened, not undermined; the base of the ulcer was formed by the muscular coat. The mucous membrane round the ulcer was thickened, and in two places there were distinct scars. No bleeding point was seen. The pyloric orifice was greatly narrowed, and the muscular coat of the stomach near the pylorus greatly thickened.

The spleen (6½ oz.) and the liver (48 oz.) were both normal. The kidneys (r. 4 oz., l. 4½ oz.): In the right the capsule was slightly adherent, and the cortex somewhat thinner than natural. The left contained a cyst the size of a marble in a somewhat diminished cortex.

The brain and cerebral arteries were normal.

Remarks.—The history the patient gave was clearly of some disease of the stomach, and of a severe disease, since it was accompanied by great wasting in a previously healthy and vigorous man. The character of the pain was suggestive of ulcer. There had, however, been very little vomiting, and the comparative absence of this symptom might be due to the fact that the patient soon after he became ill adopted chiefly a milk diet, and had a complete rest from his duties.

The physical signs present in the epigastrium were, however, extremely puzzling on the idea that the patient was suffering from ulceration of the stomach, simple or malignant; and they were the more puzzling as when he was first seen the pain was almost continual, and radiated to the sides of the body. It had not, however, quite the character of pressive pain. The pulsation in the epigastrium with a systolic thrill, and the resistance there felt, suggested an aneurysmal tumour; but against this was the absence of expansile pulsation, so that the idea of aneurysm was practically discarded. The progress of the case till death is one of ulcer of the stomach. The fine epigastric thrill and the visible epigastric pulsation seem to me to be explained by the condition evidenced *post mortem.* In the first place, there was pyloric obstruction, and the stomach was full of liquid, and the organ probably was in the same condition during the time the patient was seen, since when he first came to the out-patient room he was on a strict milk diet.

The aorta, pulsating behind the stomach full of liquid, would impart its pulsation to the liquid, and this would be seen as epigastric pulsation, and might conceivably also transmit the thrill which was felt in the epigastrium. This thrill was, as I have said, like a hydatid thrill, and the hydatid thrill is felt by transmitting a shock to the cystic fluid with the hand. Instead of a cyst and the hand, there was in this case a stomach full of liquid and the aorta, with the difference, therefore, that although the thrill gave the same sensation to the fingers, it partook of the rhythmic character of the aortic pulsations. As was stated, before the hæmatemesis came on no murmur was heard over the area of epigastric pulsation; after the hæmatemesis a systolic murmur was heard in this region. The presence of this murmur in the anæmic state into which the patient was brought by the bleeding is also explicable by supposing that the stomach full of liquid was pressing on the aorta.

VI.—*Three cases of Rheumatic Periostitis.* By J. A. Coutts, M.B., and Archibald E. Garrod, M.D. *Read November* 22, 1889.

OF all the known and demonstrable manifestations of rheumatism, periostitis is one of the least common; yet, when it is considered how frequently and how severely most of the fibrous structures of the body are affected by that disease, it is remarkable not that the periosteum should sometimes be attacked, but that it should so constantly escape. So rare, indeed, is rheumatic periostitis, that its very occurrence has been questioned by some eminent authorities; and it is on this account that we venture to bring before the notice of this Society the notes of three cases in which it was observed.

Case 1.—Alfred L., æt. 11, had an attack of rheumatism of five months' duration, commencing in September, 1882. He was brought to the East London Children's Hospital on July 20, 1883, on account of slight swelling and heat of both knees; and complaining of pains in other joints. On the lower part of the posterior surface of the right humerus was a solitary subcutaneous nodule, and none were found elsewhere after a careful search. There was a loud mitral regurgitant murmur, with increased cardiac dulness, and displacement of the apex-beat downwards and to the left.

The boy remained fairly comfortable, and for two days his temperature was normal, but after this it rose to 103°, and there was more articular pain. Three days later (August 1) the temperature again fell nearly to the normal, and a copious crop of nodules developed over the extensor tendons of the hands, the spinous processes of the vertebræ, &c., and there were a few scattered nodules of larger size over the lower ends of both humeri. The cardiac murmur had altered in tone, and there was a well-marked præ-systolic bruit in addition to the systolic one previously heard.

On the back of the upper part of the right ulna was a diffused swelling, with ill-defined edges, somewhat elastic to the touch, not pitting upon pressure, and evidently having no connection with the elbow-joint. The skin covering the

swelling was natural in appearance, but there was a small patch of erythema over the lower end of the humerus, surrounding two of the subcutaneous nodules. The swelling was apparently somewhat tender when touched, but this was uncertain owing to the painful condition of the elbow-joint.

Two days later, on August 3, the swelling was more definite and firmer; it was elliptical in shape, the long diameter of the swelling being in the direction of the long axis of the limb, and it was apparently connected with the subcutaneous surface of the ulna.

A week later, on August 10, the nodules were for the most part disappearing, and the elliptical swelling had resolved itself into an obvious thickening of the bone on the subcutaneous surface of the ulna, about an inch in length and half an inch broad.

Of the further progress of the case it is not necessary to say much. On September 19 there was a fresh rise of temperature, followed in a few days by the development of a fresh crop of nodules. On October 9 the boy was discharged in good health, but with the same well-marked swelling of the bone still present, and with a persistent mitral murmur.

Case 2.—Harriet B., æt. 11, was admitted to the East London Children's Hospital on June 9, suffering from chorea and articular rheumatism. There was some swelling of both knees and tenderness of the left ankle. Connected with the tendons on the backs of the wrists and phalanges were some nodular thickenings, and along the forearms some subcutaneous nodules. There were none about the elbows nor on the lower extremities, nor on the vertebral spines. A systolic murmur was heard at the heart's apex and at the angle of the left scapula, and there was marked accentuation of the pulmonary second sound. A few days after the onset of the articular pains slight choreic movements were noticed in the right arm and hand, and at the time of admission these had become general. The chorea was then so violent that the child had to be restrained in bed, and it prevented sleep at night. Speech and self-feeding were impossible, and there was much mental disturbance.

On June 22 the choreic movements were much less. A fresh crop of nodules had appeared over the metacarpo-phalangeal joints of both hands, but the nodules first noticed had disappeared.

On July 5 the child was recovering from a severe attack

of tonsillitis, probably rheumatic, in the course of which the temperature reached 104°.

On July 12 slight double grating was felt over the præcordium, and well-marked double friction was audible over the whole cardiac area. The cardiac dulness reached upwards to the level of the second rib.

The note of July 26 says:—Since the 12th the child has passed through an attack of pericarditis with effusion. The friction sound has gone, but the dulness remains up to the lower border of the second rib. Choreic movements have ceased.

On August 3 it was noted that a fresh crop of nodules had developed in the same parts as the previous ones, with the addition of several around the lower end of the right humerus.

Mr. Scott Battams, then Resident Medical Officer, called attention to a swelling over the upper part of the right ulna, similar to that noticed in the first case. This was evidently connected with the periosteum over the surface of the ulna, and was of the nature of a bony thickening, elliptical in shape, and with the long axis in the direction of that of the limb. The skin covering the swelling was normal, and there had been no erythema over the nodules at any time.

From this date the tumour gradually decreased in size, and the child was discharged on August 25, three weeks after the node was first noticed, with some thickening of the bone remaining in the situation where it had been.

Case 3.—Albert P., æt. 24, who had often suffered from articular pains, but who had always enjoyed fairly good health, came to the West London Hospital on April 3, 1889, with well-marked although slight subacute rheumatism, the joints of the fingers and the shoulders being swollen and painful. On the right olecranon there was a solitary subcutaneous nodule, but no others were found anywhere. This nodule gradually decreased in size under observation, and by June 15 had entirely disappeared. At the cardiac apex a soft systolic murmur, apparently of organic nature, was heard.

The joints recovered completely in a week or two under salicylic treatment. The nodule was examined from time to time, and on June 15, after its complete disappearance, a node was found, situated about an inch below the end of the olecranon, upon the subcutaneous surface of the right ulna.

This node, which was to all appearance periosteal, formed

a distinct somewhat elliptical elevation upon the bone, about one inch in diameter; the skin covering it was natural in appearance. The patient stated that he had first noticed this swelling at the beginning of June, and it was certainly not present earlier. It was somewhat painful at first, but on the 15th it was no longer tender, and it was already decreasing in size. No history of any injury to the part was obtained.

The node was seen by Mr. Stephen Paget, who confirmed the diagnosis of periostitis.

After June 22 the patient ceased to attend, having obtained work. On that day the node was little altered; the cardiac murmur had almost disappeared.

On September 28 the patient came up for examination. There was then merely the slightest trace of thickening where the node had been, and the man stated that the swelling had disappeared about a week after his last attendance. The heart's apex was slightly displaced outwards, and the first sound was not pure, but there was no distinct murmur. The pulmonary second sound was not markedly accentuated. He reported himself as having enjoyed good health since June.

This patient absolutely denied syphilis, and there were no outward signs of that disease.

In November the patient returned with a fresh attack of subacute articular rheumatism, and with a mitral systolic murmur, well heard in the axilla and behind.

Remarks.—Although two of the above cases occurred in children, and the third in a young adult, they present so many points in common that it cannot be doubted that they were of like nature, and due to the same pathological causes. Subcutaneous nodules, with signs of organic cardiac disease, were present in all, and the site of the periosteal node was precisely the same in each. In none of them was there any history of acquired or congenital syphilis, nor did any of them show any outward signs of that disease. The absence in each case of any history of a blow precluded a traumatic origin, and the absence of any changes in the superjacent skin excludes the possibility of erythema nodosum, which is sometimes mistaken for periostitis, especially when situated over the tibia. When, in addition to these negative facts, it is noticed that the nodes appeared simultaneously with subcutaneous nodules and other rheumatic manifestations, there appears to be every ground for believing that the periostitis was in these cases of rheumatic origin.

The literature of rheumatic periostitis is extremely scanty. In his *Clinique Medicale,* Chomel speaks of periosteal swellings occurring in connection with articular rheumatism. Drs. Fuller and McLeod described a periosteal variety of rheumatism, which was obviously quite different from that above described, and which was, to quote Dr. Fuller's words, "met with most frequently—nay, almost exclusively—among those who have been depressed by the operation of the syphilitic poison, or by long-continued mercurial action." At the meeting of the Association Française pour l'avancement des Sciences, at Blois in 1884, M. Verneuil reported some cases of periostitis which he regarded as dependent upon the rheumatic diathesis, but unattended by any definite rheumatic manifestations; and similar examples have been recorded by MM. Regnier and Legendre (in the *Archives Gén. de Méd.,* vol. clvi, pp. 52, 184, 411).

In text-books of surgery rheumatism is usually mentioned among the causes of periostitis, but with the exception of a short note by Dr. Angel Money in the *Lancet* for August 10, 1889, in which he speaks of nodular pericarditis, nodular pleurisy, and nodular periostitis as undoubted facts, and some cases of doubtful nature recorded by Henoch (*Diseases of Children,* New Sydenham Society, vol. ii, p. 365), we have not been able to find any reference to cases at all similar in their nature to those which have been brought forward this evening.

VII.—*A Tumour of the Infra-orbital Nerve.* By J. Bland Sutton. *Read November* 22, 1889.

A HOUSEWIFE, Susan B., æt. 22, was sent to me at the Middlesex Hospital by Mr. Lloyd Williams with the following history.

The patient applied to the Dental Hospital, Leicester Square, for relief from severe facial neuralgia. Some months previously the second right upper molar fell out. At the time she presented herself at the Dental Hospital the second right upper bicuspid was extracted, and a few weeks later the second right upper molar was also removed. These operations seemed to increase the pain. Mr. Lloyd Williams was then asked to examine the patient, and, detecting some deviation of the right eye, suspected an antral tumour and sent the woman to me.

When I examined the patient the right eye was displaced upwards and somewhat outwards, causing diplopia. On feeling along the margin of the orbit a thickening could be felt; this was most pronounced over the situation of the infra-orbital canal. Nothing could be seen or felt in the nasal passage or naso-pharynx, but a slight fulness was detected when the finger was introduced between the cheek and the wall of the maxilla. The woman complained of intense pain in the infra-orbital region, and on testing the tactile sensibility of the cheek I found the parts supplied by the nasal, labial, and palpebral twigs of the infra-orbital nerve absolutely anæsthetic. A more critical examination showed that the mucous membrane supplied by the dental branches, and the cutaneous area immediately above the zygoma, supplied by the temporal twigs of the orbital branch of the second division of the fifth, retained their sensibility.

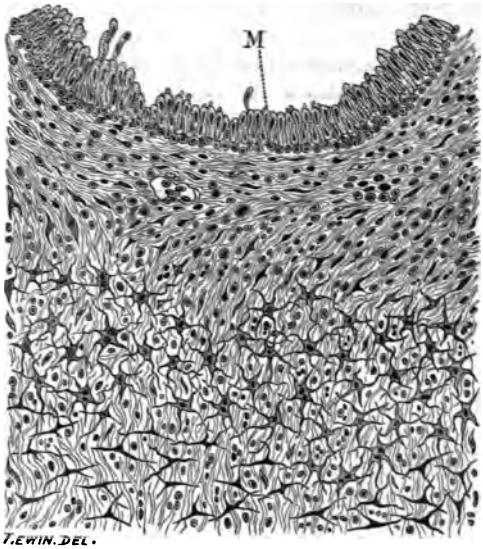
The symptoms seemed to me best explained by supposing the existence of a tumour springing from the roof of the antrum and entangling the infra-orbital nerve in its canal.

Acting on this supposition, under an anæsthetic on May 15, the larynx was opened and chloroform administered through an ordinary tracheotomy tube, and the pharynx plugged.

On reflecting the tissues of the cheek a rounded nodule of

the growth was seen protruding from the infra-orbital foramen, and on cracking away the bone a lobulated tumour was found projecting into the antrum and extending into the orbit. My surgical colleagues who were present at the operation advised me to remove the whole maxilla. This was done, and bearing in mind the agonising pain the patient had suffered, I took care to expose, and destroy with the cautery, Meckel's ganglion. The patient made a rapid and admirable recovery.

FIG. 2.



Section of a myxomatous tumour springing from the infra-orbital nerve, and invading the antrum and orbit.
M. Epithelium of the antrum covering the surface of the tumour.

On microscopical examination the tumour was found to be a myxoma. On dissecting the tumour it was found to have no connection with the surrounding bone, but to be intimately related with the infra-orbital nerve, and a study of its connections show that the tumour sprang from the infra-orbital nerve and invaded the orbit; it produced absorption of the orbital plate of the superior maxilla, and made its way into the antrum and simulated a tumour originating in that cavity, whereas it was, as a matter of fact, a tumour (false neuroma) of the infra-orbital nerve.

APPENDIX.

Report of the Sub-Committee on Mr. Bland Sutton's Case of Tumour of the Infra-orbital Nerve.

We have examined the specimens removed by Mr. Sutton, and are of opinion that, although the condition of the jaw removed and of the tumour are not of such a kind as to render a diagnosis certain, there are, nevertheless, some reasons for believing that the tumour may have had its origin in connection with the infra-orbital nerve. In favour of this view we would mention the situation of the tumour in the upper part of the antrum, the manner in which the infra-orbital nerve was involved in the growth as it issued from the infra-orbital canal, the structure of the tumour, and the fact that its lower surface was covered with cylindrical epithelium.

HENRY T. BUTLIN.
WILLIAM H. BENNETT.

May 6th, 1890.

VIII.—*A case of possible Ptomaine Poisoning.* By C. Scott Watson, M.D. *Read November* 22, 1889.

Mr. J. V., the subject of the following notes, is a stout, florid gentleman, fifty-six years of age. I first saw him professionally towards the end of 1887 for his third attack of acute gout, and he has since had either two or three others, the last occurring in the early part of April of the present year. Otherwise he has had excellent health. His urine, tested during my first attendance, showed no sign of kidney disease.

His diet for the two days preceding the illness to be described was the following:

Saturday, April 27.—Breakfast: Bacon, coffee, bread and butter. Dinner: Hot boiled salt beef, peas pudding, potatoes and spinach, rice pudding. Tea: Tea, bread and butter. Supper: Boiled mackerel, parsley and butter, Cheddar cheese, bread, and a little gin and soda-water.

Sunday, April 28.—Breakfast: A poached egg, bacon, coffee, bread and butter. Dinner: Roast beef, potatoes, cauliflower and spinach, apricots and custard. Tea: Tea, bread and butter, with watercress. Supper: Cold lamb, bread and cheese. Some gin and soda-water during the day. The household consisted of seven persons on Saturday, and of eight on Sunday. All these articles of diet—except the egg—were shared by other members of the family, but two of them require special mention. The salt beef at dinner on Saturday had been kept three days before being put in brine, and was undoubtedly tainted. It was a small piece weighing one pound, of which my patient ate about a third. The bulk of the remaining two thirds was eaten cold by one of the servants at two meals, supper on Saturday and breakfast on Sunday, without any ill effects. The mackerel, three in number, appeared to be in every respect quite fresh. My patient had the head halves of two fish, and although it was found impossible to trace the remaining parts of these, still all the mackerel were eaten, and there was no other case of illness in the house.

He slept soundly on Sunday night, and rose as usual at six on Monday morning. Not feeling well, he took two compound rhubarb pills and went to his own room, where his wife found him later dozing in his chair. He complained then and during

the day of headache and giddiness only, and his gait was noticed to be staggering. He stayed at home and spent most of the day in sleep, twice sleeping for long periods in the water-closet. In the early afternoon he managed to transact some business, and wrote a page in an account-book, but dropped his pen several times in doing so. He had neither food nor drink during the day, and at 4 P.M. went to bed.

I saw him at 9.30 P.M., April 29. He was then asleep but was easily aroused. When awake he seemed dazed and stupid, and his answers were short and rational, but often incorrect. Several times during the examination he dropped asleep. His face was flushed, his pupils notably—not extremely—dilated, and did not react to light. No ptosis or squint. Tongue dry. Pulse 116, soft. Temp. 97·6°. Breathing quiet. He complained of no pain, and sat up in bed and partly stripped for examination. Heart and lung sounds normal. No œdema. He said he had not been sick, and this was corroborated by his wife. I could get no urine to test, nor could I find when he had passed any last. There had certainly been none since 4 P.M. Being much puzzled, I ordered him a calomel powder and a placebo.

I was called to him on the following morning, April 30, at nine, and found him actively delirious. His talk was copious and incoherent. He frequently tried to get out of bed, but was easily prevented from doing so. He had hallucinations about the pictures and the people in the room, and recognised nobody. At times he was evidently at work, from the purposeful movements of his hands. In the midst of all this he would suddenly fall asleep for a few minutes, when his breathing became slowly stertorous.

He had slept a little during the night, but had been delirious and sometimes violent while awake. Face flushed, cheeks and ears slightly cyanosed. Pupils unaltered, no fresh eye symptoms. Skin dry, without rash, but the patient often scratched his chest and abdomen. Pulse 116. Tongue and mouth so dry as to produce some indistinctness of speech, but in spite of this he refused or spat out all fluids offered him. In this way he had evaded taking either the powder or medicine in the night. The bowels had not been moved and no urine had been passed. With some trouble six grains of calomel were given, followed by a little fluid. There seemed to be no difficulty in swallowing, and the voice was not nasal.

At 10 P.M. he was still in the same condition, neither motion nor urine having been passed. Temp. 99·6°, pulse

118. No evidence was obtained of distention of the bladder. The case was now looked upon as probably one of uræmia, in spite of the absence of kidney disease eighteen months before and the anomalous symptoms. Two drops of croton oil were given in milk, most of which he swallowed, and a further dose of one drop was left to be given at 6 A.M. if necessary. Gr. $\frac{1}{6}$ of pilocarpin was injected subcutaneously, but produced no perspiration. He slept a little during the night, but was constantly delirious while awake and often violent. He passed urine, a few drops in bed, at 2 A.M. on May 1, the first for thirty-four hours, and soon afterwards about 2 oz. For the rest of the night he passed small quantities, about 2 or 3 oz. every two or three hours. He had his second dose of croton oil at 6, and thereafter voluntarily took a wineglassful of milk and water. The urine was acid, loaded with brick-dust coloured urates, sp. gr. 1026; contained neither blood, sugar, nor albumen.

At 9.30 A.M., May 1, he was a little less incoherent, though he still failed to recognise me and had hallucinations. Tongue moist, thickly furred. Speech more distinct. Skin dry. Temp. 98°, pulse 114. The bowels had not been moved, but the abdomen was slightly tender.

At 3.30 P.M. the slight improvement of the morning was at least maintained. Pulse 112. Tongue again dry. He had passed a good deal of urine, always in small quantities.

About 4 P.M. the bowels were first moved. The motion was large, green, frothy, and very offensive, the smell being described as that of putrid meat. A second smaller motion was passed between 5 and 6, after which the patient fell into a quiet sleep, and woke at 7 P.M. perfectly sensible. I saw him at 9. The pupils were rather less dilated, but did not react to light. He could read small print without difficulty. He complained of headache confined to a patch the size of half a crown over the left eyebrow, and the skin there was tender. He was quite rational and natural in manner, and remained so. He had some indistinct and incorrect memory of his doings during the early part of Monday, but of nothing afterwards. He was kept strictly to milk diet. The headache lasted till the following evening, May 2, and the pupils did not regain their normal size or activity till the morning of May 3.

At 5 A.M. on May 2, that is on the morning following his recovery, he woke with pain in the left foot. This proved to be the beginning of a subacute attack of gout which affected first the outer side of the left foot, then the left great toe joint

and the left wrist, and from which he did not perfectly recover till the end of May.

The symptoms bear a close resemblance to those of atropin poisoning, the chief differences being the absence of complete dilatation of the pupil and the absence or evanescence of paralysis of accommodation.

Cases of atropin-like poisoning from sausages have been known for many years, and lately cases of fish poisoning with similar symptoms have been recorded by Schreiber, von Anrep, Tchugin, and Hirschfeld.

It is this resemblance to atropin poisoning, together with the speedy and complete recovery on evacuation from the bowel of two putrid-smelling motions, that leads me to think the case one of ptomaine poisoning. My case, however, differs from those alluded to above in several important particulars: from all of them in the presence of delirium and acceleration of pulse, and in the absence of extreme dilatation of the pupil, ptosis, and accommodation paralysis; and from most of them in the temporary suppression of urine, and the fœtid motions.

The resemblance is at first sight sufficient to throw suspicion on the mackerel, but in all the cases of atropin-like poisoning by fish of which I have been able to find particulars the fish have been preserved for some time either by salt or vinegar. In Schreiber's cases the fish had lain in vinegar for five or six days, and was recognised as unwholesome at the time of eating; in von Anrep's cases the poisonous fish was salted sturgeon; in Tchugin's, salted herrings; in Hirschfeld's the fish were cooked and laid in vinegar, and it was only the last of them, eaten when they had become somewhat mouldy, that proved poisonous. I have not discovered any case where half of a fresh and apparently wholesome fish has caused such symptoms while the remainder has been innocuous. The poison evidently did not exist in the salt beef, for two reasons: (1) the absence of any effect on the cook who ate the bulk of it; and (2) the time, forty-one hours, that elapsed between its ingestion and the appearance of symptoms. All the other articles of diet are excluded as sources of the poison in the same way: they were eaten by others, on whom they produced no bad effects.

In this difficulty I would suggest that the ptomaine may have been formed in the intestine by the putrefaction which apparently went on there, and produced the motions smelling of "putrid meat."

The position of the illness running up to an attack of gout is curious, but as far as I can see must be considered accidental.

IX.—*Eight cases of Thyroid Cysts and Adenomata, treated by enucleation.* By CHARTERS J. SYMONDS, *Read December* 13, 1889.

THE following cases are offered as a contribution to the surgery of the thyroid gland. They are given in chronological order, to indicate the improvement in the method of operation.

CASE 1. *Adenoma of thyroid: extirpation of entire gland.*—Thomas B., æt. 29, was admitted into Guy's Hospital May 17, 1883. Just before Christmas, 1882, he noticed a pain in his neck, which increased on swallowing; in February, 1883, a lump was noticed above the sternum, and in March he was obliged to give up work on account of the inconvenience on stooping. He was admitted under Dr. Mahomed into Philip Ward with dysphagia, and a tumour above and behind the sternum. It varied in size, but was no smaller when discharged on April 21.

When admitted under Mr. Symonds there was a firm tumour in the median line reaching two inches above the sternum, the lower end lying beneath the bone. It extended a little to the left side under the sterno-mastoid. He complained of pain during swallowing, when the tumour moved up and down with the thyroid. It was rounded, elastic, apparently solid. When working, the tumour compressed the trachea and produced dyspnœa.

May 29.—A median incision was made from the centre of the thyroid cartilage to the sternum, the tumour quickly exposed and brought forward with the thyroid lobes; it was attached to the isthmus. After ligaturing several small vessels the tumour was detached from the lobes. A wide irregular bleeding surface was left, and as this seemed part of the tumour the entire gland was removed. Commencing on the right side the lower border was raised, and the inferior thyroid arteries and veins ligatured, the former with silk, the latter with gut; then the superior was ligatured and divided. Next the isthmus was dissected off the trachea, the left lobe attacked in the same way, and the whole removed. Very little blood was lost, neither the carotid sheath nor the laryngeal

nerves being seen. The operation lasted two hours. The spray was used. Two drainage-tubes were inserted, one on each side. No dyspnœa occurred. Seven hours later the breath was noticed to be a little foul.

May 30.—Pulse 92, temp. 100°, evening temp. 98·6°. Voice natural. Dressed at 2 P.M.; both tubes removed and returned, not syringed.

May 31st.—Dressed; one tube removed and replaced; breath still foul. He has expectorated a good deal of muco-purulent material without odour. Nine hours later (fifty-three hours from operation) fœtor had disappeared from breath and expectoration almost ceased. He had very little pain on swallowing.

June 4.—Tubes shortened, sutures removed. Could swallow solids.

June 6.—Tubes again shortened.

June 14.—Both tubes removed and the man got up.

June 28.—The small sinus that had existed in the drainage-tube site was now completely healed. The voice has decidedly improved, being very much clearer and more distinct.

Pulse and temperature were normal throughout.

His was the first case upon which I had operated, and was undertaken before the cachexia following complete extirpation was well known. When the tumour was removed the ragged surface left seemed likely to bleed, and therefore the whole gland was removed. The isthmus was large, and the tumour, which was quite solid, had grown from the angle between it and the left lobe. It was a matter of great regret to me afterwards that the gland was removed. It was quite an unnecessary procedure.

All attempts to trace the patient up to date have failed.

CASE 2. *Adenoma of the right lobe of the thyroid (causing complete dysphagia): extirpation of the lobe with the tumour: recurrent dysphagia.*—Mary Ann R., æt. 54, admitted into Guy's Hospital June 19, 1883. She came as an out-patient on June 17 complaining of dysphagia; she was to be admitted in three weeks, but the dysphagia increased so rapidly that she had to be taken in on the 19th. She had a rounded tumour in the neck between the right sterno-mastoid and trachea. It moved with the trachea, measured 2¼ inches vertically and 3 inches horizontally. The anterior and lower limits were well defined, the outward limit was obscure. A heaving but no expansile pulsation existed. It extended from

a little below the upper margin of the thyroid cartilage nearly to the sternum. No venous congestion, pupils normal, no dyspnœa, voice weak. The larynx slightly pressed to the left. The tumour was first noticed two years ago, has gradually increased. Dysphagia for twelve months, no solid food for two weeks.

June 19.—She had to be fed by a rubber stomach-tube, and enemata were ordered.

June 27.—An incision 3 inches long was made over the tumour to the right of the middle line, the muscles separated, and the tumour exposed. The isthmus was divided between two silk ligatures to give room; that on the right side slipped off, the other was cut short and left. Numerous vessels were tied, and when the lower end was freed the lobe and tumour bulged forwards, appearing three times as large as anticipated. The original incision had to be enlarged in both directions; considerable hæmorrhage took place, and many vessels were tied. The isthmus was $\frac{7}{8}$ of an inch wide. At the lower part of the wound the pleura was seen, and the carotid artery; a large drainage-tube was put in. The operation occupied two hours. Spray was used. The temperature of the theatre was about 86°. Four hours later a little bleeding took place, and a vessel in the right edge of the wound was tied. The head was placed between sand-bags.

June 28.—Dressed to-day, skin united, no swelling.

The tumour on dissection was found to be encapsuled, and was easily turned out from the lobe of the gland. It was placed at the back, but might have been removed by cutting down to the surface and then dissecting off the lobes. In all subsequent cases this knowledge of the anatomy was used, and no bleeding has been encountered. In structure it showed the usual spaces lined by cubical cells, and filled with mucoid material.

June 30.—Dressed, no suppuration, tube replaced by a smaller one. The temperature has been up at night to 101° since the operation. No cause found except sickness and the high temperature of the atmosphere (80° in shade, with thunderstorms).

July 9.—Tube removed.

July 23.—Her voice is weaker since the operation, and the right cord moves very feebly.

August 8.—Discharged, wound healed, swallowing well all kinds of food.

December 13.—She returned with difficulty of swallowing and a swelling beneath the cicatrix; the right vocal cord was motionless.

December 14.—Swelling opened, a little pus was found, and the silk ligature with loop entire, which had tied the isthmus, was found loose near the carotid. One other small ligature was found.

December 28.—Discharged, much relieved.

September 14, 1884.—She was readmitted with dysphagia and much reduced in health, and suffering with general pains in her joints and limbs. Admitted with a view of separating the œsophagus from the cicatrix.

September 19.—By a vertical incision the œsophagus was exposed in the old cicatrix, a bougie was passed into the œsophagus as a guide, and 1½ inches of its length on the right side was separated from the surrounding structures. No old ligature was found, no bleeding took place, wound dressed with carbolic gauze.

September 29.—She was discharged able to swallow quite well, with the wound quite healed.

This patient continued to attend from time to time till the middle of 1888, five years after the operation. The dysphagia remained, but always improved or disappeared when she was well fed and rested. The vocal cord never recovered its movement, but she had a good voice, and could cough three times in succession. There seemed no doubt that the nerve was injured during the operation. It was not seen, nor was there any difficulty in raising up the tumour. Prior to the operation the voice was weak. Complete recovery of deglutition followed the removal of the growth, and lasted for some time, showing that the dysphagia was due to pressure; but that which subsequently returned is not so easily explained. At first I thought it due to the cicatrix which must have been attached to trachea and œsophagus, causing traction. On this view the gullet was exposed and freed, with temporary relief.

The improvement that followed good living and rest pointed to a neurotic origin.

Case 3. *Adeno-cystoma of thyroid: extirpation.*—G. S., æt. 30, a chemist and analyst, was brought to me for a rounded swelling on the left side of the median line beneath the st[illegible]no-mastoid. It moved with the trachea and presented [illegible]haracters of a thyroid cyst. The finger could just be

inserted between its lower border and the sternum when the larynx rose in deglutition, but usually it lay partly beneath the bone. It compressed the trachea and gave much inconvenience. For some time he was treated by iodides without relief, and he then requested that it might be removed. Altogether it had existed nearly a year.

August 29, 1886.—A median incision readily exposed the cyst, the capsule was followed, and the tumour turned out with great rapidity and ease. Three of the small vessels were tied, a drainage-tube inserted, and the wound closed with silk. The isthmus was large but healthy. The tumour was connected with the lower and inner face of the left lobe. It measured two inches by an inch and a half, had a firm fibrous capsule with septa dividing it into loculi. In the wall and septa was some calcareous material. Most of the spaces were filled with mucous fluid containing cholesterin. In others there was the soft gelatinous material seen in the other species of adenoma. Microscopically there were the usual acini, lined by epithelium of a short columnar form.

The wound was dressed on the first day because, as usually happens, some blood had run beyond the dressings.

On the third day the tube was removed and all the sutures, primary union having occurred. He swallowed freely and had no pain.

On September 6, eight days from the operation, he was discharged quite well. This patient was seen in March, 1889, when he was well.

Case 4. *Thyroid adenoma: extirpation.*—Janet C., æt. 27, admitted December 31, 1886. Five years ago a friend whom she had not seen for some time noticed the enlargement of the neck, which has gradually increased since. She is fair and thin. In the right lobe is a rounded moveable tumour. With the head at rest it crosses the trachea to the left side, reaches as low as the sternum and as high as the lower border of thyroid cartilage. When the sterno-mastoid is in action the tumour recedes and the front of the trachea is exposed. When the parts are relaxed the finger can be placed between the tumour and the sternum. The left lobe and isthmus are normal. The right eye looks smaller and sunken. The palpebral aperture is smaller, and the pupil is contracted, being one third smaller than the left. She complains that this eye is tired, especially at night, and it looks heavy and half closed. The voice is natural. Both cheeks flush. No

difference in the sense of smell. In accommodation there appears to be more contraction of the left pupil than of the right. The pupil contracts further to light, but does not dilate in shade. These symptoms show pressure on sympathetic. She complained of the aching of the eye and of difficulty in breathing at times, and was anxious to have the mass removed.

January 4, 1887.—Under full antiseptic precautions a median incision was made, the capsule reached, and the tumour quickly enucleated. A few small vessels required ligature. The gland was not interfered with. A drainage-tube was passed into the wound and silk sutures employed. The tumour was oval, soft and very elastic, so that most thought it fluid when removed. On making a section it proved to be a solid, pale, semi-gelatinous tumour, in which, however, the glandular structure could be discovered. It was the size of a small hen's egg.

January 5.—Tube shortened.

January 7.—Second dressing, suture and tube removed.

January 10.—Third dressing, boracic lint substituted.

January 11.—Up for half an hour. A granulating surface where the tube entered alone remained.

January 20.—Pupil remains the same; it contracts to light, but dilates less than the left in shade.

January 21.—Discharged.

February 25, 1889.—Came up feeling unwell. Right pupil is larger than it used to be, and the eye less heavy. No return of the growth. Her symptoms connected with depression of health only.

The sympathetic nerve phenomena in this case were very marked, the condition of the pupil and palpebral aperture being exactly similar to that seen in cases of ruptured brachial plexus. The tumour was not deeply situated, was easily removed, and the rest of the lobe appeared healthy, and after five years there is no recurrence. It appears, therefore, a little difficult to explain the implication of the nerve. May it be due to some other cause, as the ocular appearances persist?

N.B.—This patient, exhibiting still the above sympathetic nerve phenomena but otherwise in good health, was shown when the paper was read.

Case 5. *Adeno-cystoma of thyroid: extirpation with the left lobe of the gland.*—Mary L., æt. 23, admitted to Guy's Hospital May, 1887, with a localised growth in the thyroid.

The tumour is irregular in shape, reaches from the top of the thyroid cartilage to the sternum, behind to the posterior border of the sterno-mastoid, in front to the middle line. A separate lobule occupies the middle line, and is connected with the greater tumour. The isthmus apparently can be felt above and to the right of the small tumour. Right side feels normal when lying down; when up looks full.

Her eyes, she is told, are more prominent than they used to be. Four months ago she was told this, while the swelling has existed in the neck four years. No other member of the family affected. The pupils are the same in size and reaction, no one-sided pain; no aching in the eyes. At night she feels a choking sensation, but no cough or pain in chest. The tumour has increased rapidly during the last three months, and she has got thin.

June 7.—Operation at 9 a.m. The thyroid had diminished a good deal since she had been resting. A median incision was made from the hyoid bone to the sternum. Numerous large veins were exposed, and one or two wounded. After drawing aside the sterno-hyoid on right side, which was thin, that on the left side was also reflected. Then the deep fascia was divided, and the small central tumour exposed. It was bluish and apparently cystic. Above and internal to this the isthmus was exposed, and running off to the left and upward a large mass of thyroid which concealed the trachea; this also apparently concealed the greater part of the tumour. Having decided to extirpate the left lobe, I proceeded to isolate the isthmus in order to command the trachea as soon as possible. A double silk ligature was carried round and the isthmus divided; it proved to be smaller than expected. The tumour was then, with the lobe, dissected off the trachea and all vessels closed. Then the lower part of the tumour was exposed, and by careful dissection raised forward without any trouble or hæmorrhage. When the upper extremity was reached the inferior thyroid vessels were tied, and it now turned out that the thyroid lobe lay in front of the tumour and on its median side. The whole mass was now separated, and consisted of a lobulated tumour and the left lobe of the thyroid.

The inferior thyroid was not seen. Besides the superior thyroid vessels only three other small ones required ligature. These were all secured with catgut. The numerous veins that bled in the earlier part of the operation were closed by the pressure of forceps. The recurrent laryngeal nerve was not

seen. After the removal a deep cavity was left, the lower part of the floor of which projected during expiration. Several silk sutures closed the wound, into which a large drainage-tube was inserted. The spray was used throughout, together with other antiseptic precautions.

The whole operation lasted about forty-five minutes. There was no laryngeal spasm at all, and very little blood was lost, though much more than in the other cases, on account of the lobe being excised. Three fine gut ligatures and the silk one on the isthmus were all that were necessary.

The wound was dressed about four times, the pulse and temperature remained normal, and she was discharged well on June 23.

By the eighth day the wound was reduced to a small superficial granulating surface. The drainage-tube was removed in this case early, I think within forty-eight hours.

The tumour measured $3 \times 2 \times 1\frac{1}{2}$ inches; it was composed of a number of small cysts, separated by fibrous septa surrounded by a definite capsule, and contained the usual gelatinous material. There was some solid material also. The lobe was quite healthy, and was easily dissected off from the growth.

Case 6. *Thyroid cyst behind right lobe: extirpation: primary union.*—Mrs. M., æt. 24, was sent to me by Dr. Steele-Perkins, of Streatham. She had a thyroid cyst on the right side, of three years' growth. It was freely moveable, and gave no inconvenience except from its size, which was about as large as a small orange. It appeared to be beneath the right lobe, for an edge somewhat lobulated could be felt covering the upper part of the tumour, while below this it was smooth. The former experience of these tumours left it doubtful whether it was a pure cyst or an adeno-cystoma. The patient being anxious for its removal I decided to extirpate.

On May 31, 1888, assisted by Dr. Steele-Perkins and my dresser, Mr. Judon, Mr. Roper giving chloroform, a median incision was made and the right lobe exposed, behind which was situated the tumour. Just below the lobe a part of the cyst was exposed. The lower end of the lobe was raised off the cyst without any bleeding. Then the cyst was accidentally punctured, a circumstance which I thought would delay its removal, but on the contrary it much facilitated the measure, for the edge could be drawn forward and the gland dissected off with a blunt dissector. When removed the pre-vertebral muscle with the œsophagus were exposed. The lobe was not

interfered with. *No vessel* at all was ligatured. The cyst showed the usual gelatinous glandular material in the wall, and the usual fluid. A smaller opening than usual sufficed owing to the cyst being opened. The cyst was about two inches in diameter. The wound was filled with sublimate solution (1 in 1000), throughout the operation the spray not being used. Fine silk sutures, one drainage-tube, iodoform, and gauze. On the second day dressed, and tube removed on the third day. Primary union took place, there was no elevation of pulse or temperature, and by the end of a week she was up and about.

The accidental puncture of this cyst led me to decide in future cases to deal with them as with ovarian cysts—that is, to make a small cutaneous incision, to expose thoroughly and open the cyst, and then to pull it forward, pushing off the gland with the handle of a scalpel or a blunt dissector.

Case 7. *Small right thyroid cyst: extirpation.*—Mrs. U., æt. 25, admitted into Martha Ward, November 24, 1888. Married, has two children, youngest one year nine months. After the birth of the last she observed the swelling. She complains of a small lump in the right side of her neck, situated on the upper part of the right lobe of the thyroid, just between it and the isthmus. This is rounded, tense, and elastic, and just below can be felt an irregular mass, which appears to be the lobe flattened out. She states that this interferes with breathing at times, and gives her a good deal of distress, and asks that it be removed. There was no sympathetic nerve disturbance.

November 28.—A small vertical median incision was made, the muscles separated, and the cyst at once exposed. It was taken up by forceps and shelled out by a director from the gland which surrounded it below and from the fascia above. It was opened in the process; only one small vessel in the thyroid required ligature. The cyst was one inch in diameter, the wall contained a few masses of glandular tissue, similar to that usually found in such specimens.

The wound was dressed once on the second day. On the fourth the sutures were removed, and by the end of the week she had left the hospital. She presented herself a couple of weeks later, very much improved in health, having gained flesh and lost the haggard look she presented before the operation. A good deal of her distress was nervous.

Case 8. *Adeno-cystoma of thyroid* (reported by Mr. N.

Irestone).—Keziah W., æt. 41, admitted to Guy's, September 30, 1889. Married and has three children. She has lived in India. Nine years ago the present swelling began; the growth has been very slow until the last three months, when it has increased rapidly. There was a large growth occupying the left side and middle line. It reached from the upper border of the thyroid cartilage to the sternum and over to the right sterno-mastoid muscle. The larynx was pushed nearly an inch out of the median line. The tumour was elastic, moved readily, and appeared to be connected with the left lobe where it joins the isthmus.

October 1, 1889.—A median incision an inch and a half long was carried through between the muscles, and the cyst exposed without any bleeding. After sufficient of the wall was brought into view the cyst was opened and a good deal of fluid evacuated. The margins were seized with forceps and the cyst drawn forwards. On inserting the finger a good deal of solid growth was found. The thyroid was dissected off with the finger and a raspatory, while the cyst was drawn forwards. No difficulty was experienced in removing the cyst through an opening much shorter than the length of the cyst. One small vessel was tied as the tissue peeled off. The wound was constantly filled with sublimate solution, the spray was not used. Iodoform was freely dusted, and a drainage-tube inserted, the wound closed with silk. The tube was removed at the first dressing on the second day. The sutures were removed at the second dressing on the seventh day. On the ninth day she got up, and went out on October 12, the eleventh day. She was a feeble cachectic-looking woman, and required greater care than usual. It was feared that a small external opening with a wide and large and deep cavity might occasion difficulty in securing a bleeding vessel. It was found, however, that the wall of the cavity was so elastic and loose that it could easily be brought up to the surface and examined in every part. The method, therefore, of operating through a small incision proved quite successful. The wall of the cyst had attached to it a greater amount of solid adenomatous growth than usual; the mass weighed nearly three ounces. In structure this was the same as in the other specimens.

Remarks.—Of the eight cases, six were in women and two in men. Six of the patients were thirty or under, while one was fifty-four. Several methods have been adopted in the treatment of cysts of the thyroid gland. Of the two leading

plans, one is that of injecting perchloride of iron and setting up suppuration, and maintaining drainage. This is known as Mackenzie's, upon which a recent communication has been published by Mr. Hovell. This plan takes, as a rule, many weeks, and is often attended with severe hectic fever. Its chief merit lies in the small size of the resulting scar. When, however, these tumours are examined, and the adenomatous growth is found in them (or calcareous plates), one sees a reason why injection has only a limited application, while for the solid forms it is of course useless. Leaving this plan then to stand upon its own merits, I myself prefer one that leads to a rapid recovery in a few days.

Mayo Robson, and others before and after him, have advocated laying open the cyst and stitching it to the skin. This is also a prolonged method, leaves as large a wound, and has no advantages over extirpation, when it can be shown that the latter method can be performed without hæmorrhage. These eight cases were all treated by extirpation. In two the lobe in which the tumour grew was removed, in one the entire gland, while in the remainder the new growth was alone extirpated. At the time of the first operation I knew little as to the safety of these operations, or of the consequence attending complete removal of the gland. But this case taught me in future to be content with one lobe at most. In the second the lobe was removed, the other side being healthy. The isthmus was tied with a silk ligature, and here also the incision was made *over* the tumour to the right of the middle line. Now here three suggestions for improvement arose. In the first place the lateral incision gives far less space than the median, unless, like Hahn, we are prepared to cut through the skin in various directions. In all subsequent cases the median incision was used. The lobe and the tumour can always be brought under the incision when the deep fascia is divided and the muscles separated. The next point and the most important of all was this, that after the removal the tumour proved to be completely encapsuled, and might have been turned out with the greatest ease from the back of the lobe. This observation directed future operations, for in all except one the lobe was dissected off. The third lesson learnt from this case was the method of dealing with the isthmus. The ligature subsequently came away, and though this may have been due to imperfect preparation, others of similar size not having given trouble, it suggested some other method of securing the isthmus. Consequently in a case of enormous goitre, to be

subsequently recorded, I scraped through the isthmus with a blunt dissector, following the sulci between the various lobules. In this way the tissue to be secured amounted to a small fibrous band containing the vessels and requiring only a fine ligature. There are no large veins in this part of the gland, and if the lobules be first freely exposed little hæmorrhage will result.

The experience gained was applied in four other cases, and with the result that no bleeding occurred of any moment. In one case not a single vessel was secured, in the others only two or three small ones.

In the remaining case the lobe was removed because it appeared that the cyst was intimately incorporated with it. This was an error, and due to the fact that the cyst was behind the lobe, and therefore the capsule could not easily be reached. On dissecting this specimen it appeared that if the gland had been raised off the cyst, the latter could easily have been enucleated. Prepared for a similar arrangement, and how to deal with it, a case soon came under treatment giving the opportunity (Case 6). On exposing the swelling the edge of the lobe was seen, and below this the lower rounded limit of the cyst. The capsule was exposed, and once its level was reached, the dissection was carried out by a raspatory, and the cyst peeled out without any hæmorrhage whatever. In this operation a very important suggestion arose. While isolating the cyst it was opened, and it collapsed. This I looked upon as unfortunate, and as likely to render removal difficult. It proved otherwise; for by securing the margins of the cyst it was easily removed by dissecting back the thyroid. I determined in a future case of moderate dimensions to make a small cutaneous incision, expose the wall of the cyst over a space large enough to seize with forceps, open it, secure the sides, and peel out as one does in ovariotomy. This plan was successfully carried out in the next case, and in the last case an adeno-cystoma measuring three inches by two was removed through an incision one and a half inches long. After removal the wall of the large cavity could be brought easily up to the surface and examined for bleeding points. The facility with which this could be done appeared to dispose of the only danger incident to the method, viz. inability to secure a bleeding point deep in the cavity.

It may be well to summarise the plan which seems to me the best. For deep-seated growths make a median incision one and a half to two inches long, having its centre opposite or

over the centre of the tumour. When the deep fascia is divided, and the muscles separated, the tumour and lobe can at once be brought to the median line. Search next for the capsule. In most cases it will be seen at once, but in a few the edge of the gland may have to be raised first. It is most essential to be sure that the smooth white covering is exposed; for if not, and the dissection be carried outside it, troublesome hæmorrhage is sure to follow—in fact, the entire success turns upon this point. If the tumour be solid it must be dissected out by a blunt dissector, while the margins of the gland are held aside by forceps. A cyst can be extirpated in the same way, but I have found it much easier to evacuate the cyst at once, protecting the parts with sponges, and then to peel it out. There is never any pedicle in these cases, and therefore no big vessel to tie as the tumour comes out. Hæmorrhage need not be feared, and even if it did occur, the wound can then be enlarged. For a cyst I suggest this plan as leaving less scar and facilitating the operation; a cyst two inches across may thus be removed without any bleeding. We may compare these tumours to mammary adenoma in the ease with which they can be removed. They give rise to less bleeding, because we can reach the growth without cutting through glandular tissue. They are overgrowths of certain parts of the thyroid; some are solid, some cystic, others a mixture of these two. They are encapsuled, and turn out with margins.

Professor Hahn, of Berlin, whom I saw remove a simple cyst in January last, employed the lateral incision, enlarging it by several other incisions in various directions. He used many silk ligatures to tie the surrounding tissues, and finally stuffed the wounds. The method here employed is superior, in that there is less scar, less hæmorrhage, and primary union. It is unnecessary to say more than that strict care was taken to have everything aseptic. I myself attach the greatest importance to the use of towels wrung out of lotion fastened round the operation site, to the arms being bare, to the use of an apron or towel pinned over the waistcoat, both by surgeon and assistants.

In most of the cases the spray was used; in three, sublimate only. The situation is a good one for the use of solutions, as the wound can be kept filled. The after treatment consists in the removal of the drainage-tube on the second day, and in most of the cases this was the only elaborate dressing, simple boracic ointment being substituted.

Structure.—All the cysts contained the usual dark fluid, and

in every one there was more or less of solid material, looking red and gelatinous. This on microscopic examination showed acini lined with cubical or columnar epithelium. The solid forms have the same structure. Hence the correspondence with the adenomata of the breast is still closer, for in both we have solid tumours and cysts with varying amounts of adenomatous growths.

In the cases here recorded one tumour only existed in each case, but there seems no reason whatever why two or more should not be enucleated at the same operation, it being always ascertained that the rest of the gland is healthy.

As to diagnosis between cystic and solid, it seems in small growths at least impossible to decide without aspiration. I prefer to operate at once without previous exploration, and puncture the tumour when freely exposed. A perusal of the cases will show that in all but one the symptoms demanded relief. Removal is unnecessary where symptoms are absent, unless the patient requests it.

In conclusion I would like to add that in this communication my only object has been to relate my own experience up to the present time, in the hope that it may prove useful to others, and not to attempt to formulate a method which in some cases may be unsuitable. For instance, it may occasionally be necessary to increase the incision by an oblique extension upward where the tumour is solid, but a previous evacuation in cysts will, I think, render this unnecessary.

Note.—Some of the cases have been mentioned in a paper published in the *Guy's Hospital Reports* by Mr. Pennell, viz. Nos. 1, 2, 3, 4, and 5.

Summary of Mr. Symonds' Cases of Thyroid Cysts and Adenomata treated by Enucleation.

1	Thomas B.	29	Adenoma placed partly behind sternum; 6 months' history	Removal of tumour and whole thyroid, May 29th, 1883	Spray; tubes wholly removed 16th day; all healed 30th day	Primary union except track of tube.
2	Mary Ann R.	54	Adenoma behind right lobe; complete dysphagia; 2¼ by 3 inches; 2 years' history; 1 year dysphagia	Tumour and right lobe removed June 27th, 1883	Spray; isthmus tied with silk; smaller tube inserted on 3rd day and removed on 12th day; sinus closed 26th day	Primary union except tube track; dysphagia completely relieved, but recurred later; right vocal cord paralysed; œsophagus subsequently dissected, free from the scar.
3	George S.	30	Adeno-cystoma in lower part of left lobe compressing trachea; 1 year's symptoms	Tumour removed August 29th, 1886; three small vessels tied; measured 2 by 1½ inches	Spray; tube and sutures removed on 3rd day	Primary union; discharged on 8th day.
4	Janet C.	27	Adenoma in right lobe; 5 years; ocular sympathetic paralysis; dyspnœa at times	Removed January 4th, 1887; easily shelled out; two or three small vessels tied	Spray; at second dressing, on 3rd day, tube and sutures removed; up on 7th day	Primary union; discharged on 17th day; ocular symptoms improved, but persist December, 1889.
5	Mary L.	23	Multilocular cystoma in the back of left lobe, and concealed by it; tumour 3 by 2 inches	Tumour and lobe removed June 7th, 1887; venous bleeding; three gut ligatures used, and a silk to isthmus	Spray; tube removed on 2nd day	Primary union; discharged 16th day.
6	Mrs. U.	24	Cystoma 3 years' growth; size small orange; in back of left lobe	Removed May 31st, 1888; lobe raised up; no vessels ligatured	Sublimate solution only used; tube removed 3rd day	Primary union; up at end of a week.
7	Mary U.	25	Cystoma of right lobe; 18 months; some dyspnœa; cyst 1 inch in diameter	Removed November 28th, 1888; one small vessel ligatured	Sublimate only; tube removed 2nd day; sutures on 4th	Primary union; discharged at end of week.
8	Keziah W.	41	Adeno-cystoma 9 years; dyspnœa of late; reached from top of larynx to sternum; larynx displaced	Removed October 1st, 1889; one small vessel tied	Sublimate only; tube removed 2nd day; sutures 7th	Primary union; discharged on 11th day.

X.—*A case in which a diffuse Aneurysm developed in the calf of the leg, simulating Abscess. Recovery after removal of parts of the popliteal and tibial arteries.* By William H. Battle. *Read December* 13, 1889.

J. F., æt. 28, a labourer, was admitted into St. Thomas's Hospital under the care of Mr. John Croft on December 27, 1887, and left October 27, 1888.

About five weeks before admission he was coming down a ladder, and his foot slipped off the last rung. He did not take much notice of it at the time, but the next day it was painful, and the calf was slightly swollen; he consulted a doctor, who gave him some liniment. The patient was able to get about and do his work for a few days, but at the end of a fortnight was obliged to give up on account of increasing pain and swelling in the leg; this was especially marked in the lower part. Since that time the pain had been very severe, worse at night, and preventing sleep.

The family history was good. He was married, and had two children, both healthy. He was healthy himself, so far as he knew; had suffered from smallpox, but had not had any venereal disease.

On admission he was a pale, sallow, anæmic, anxious-looking man, marked by smallpox, complaining of pain and swelling in the left leg. He was of slight build. Examination of the leg showed much swelling from the knee downwards, the leg being at least a third larger than the right, and in shape almost circular. The limb was hot, painful, and tender. About 5 inches from the ankle on the inner side was an area of marked redness; here there was fluctuation, œdema extended all round the ankle-joint, obscuring the bony prominences. There was no pulsation in the swelling, and the arteries at the ankle were not to be felt. With the exception of the point mentioned, the impression given by the leg was that of hardness due to great stretching and excessive tension of the parts by fluid, which had commenced to form deeply in the calf, and now extended from the upper end of the tibia to within 4 inches of the internal malleolus. The temperature, taken in the axilla, was 102·8°.

My impression at the time was that the man was suffering from an abscess of the deep calf, into which there had been recent hæmorrhage from ulceration of vessel.

Acting for Mr. Croft, it seemed to me the best thing for the patient to have the swelling opened. By that means the tension would be diminished, the cavity emptied and drained, and the patient relieved of his pain. Accordingly in the evening Dr. Bulstrode kindly gave ether, and after shaving and washing the leg an incision about an inch long was made an inch behind the tibia over the red and fluctuating part; this was done with care under the spray. Directly the deep fascia of the leg was incised there was a gush of pure blood, but no pus escaped. Esmarch's bandage was at once applied above the knee, a finger meanwhile being kept in the wound to prevent further escape of blood. After this the incision was slightly enlarged, and the cavity emptied of its contents; these consisted almost entirely of bright fluid blood with some laminated blood-clots. As the light was not good, and other circumstances were unfavorable, the patient's consent not having been obtained for operation which might mean amputation of the limb, it was decided to plug the wound, and do what might be necessary on the following day. Long strips of lint were passed, and the cavity plugged as far as possible in its whole extent, the ends being left out at the incision; a pad of oiled lint was placed over this, the limb enveloped in absorbent cotton wool, evenly bandaged to above the knee, Esmarch's bandage removed, and the leg placed on a McIntyre's splint. He passed a fair night, being able to sleep, and was without pain. The temperature fell to 100·8° at 12.30 on the 28th, and he was more comfortable altogether.

On that day Mr. Pitts and Mr. Makins kindly saw him in consultation, and approved of my proposal to open up the cavity and explore. The former was able to give me his valuable assistance. Accordingly at 2 P.M. ether was again administered, and the wound examined. There had been but slight oozing. The plugs, which must have weighed quite 1½ lb., were removed after the application of Esmarch's band above the knee. The thigh and leg were flexed, and laid on the outer side. With the finger in the wound the incision was rapidly extended upwards in a line about one inch behind the posterior margin of the tibia, as high as the tuberosity of that bone, the large cavity carefully sponged from adherent clot, and search, which proved unsuccessful, made for an

opening into vessel. None could be seen, so the elastic band was removed, and a single pulsation permitted. A gush of blood from the outer and upper part of the wound followed. The band was reapplied, and as the point could not be reached without further extension of incision, this was carried obliquely upward and outward into the popliteal space, some of the internal head of the gastrocnemius muscle being divided; a branch artery to this muscle was cut close to the popliteal artery, as this vessel made an unexpected turn backwards to reach the popliteal space. It was now possible to reach and examine the opening in the vessel; this was in the posterior aspect, about 4 lines in length, and situated in the posterior tibial artery just below the bifurcation of the popliteal. A probe was passed upwards into the popliteal and downwards into the posterior tibial; for a short distance in each of these directions the fascia was stripped off the vessels, leaving them exposed. As the opening in the artery was too close to the anterior tibial origin to admit of the application of a ligature between the two without almost a certainty of secondary hæmorrhage, and a small vessel previously mentioned had been divided close to the main trunk above, it was considered best to apply ligatures to the popliteal above that point, to the anterior tibial just beyond its origin, and to the posterior tibial below the opening. These vessels were accordingly cleared, silk ligatures applied at the points indicated, and the portions of vessels included dissected out. No branches were given off from the parts removed. The interior of the cavity, which extended from the point at which the ligature was applied to the popliteal downwards to within four inches of the internal malleolus, and outwards to the deep fascia of the leg, was lined by shreddy bits of muscle and fibrous tissue; whilst the interosseous membrane and deep muscles had been pushed forward between the bones with the vessels, the popliteal being thus compelled to make an unusual and abrupt curve backwards to reach the surface of the popliteus muscle. The muscles were thinned, stretched, and atrophied. When the finger was pressed between the bones from behind, the relaxed structures gave way before it, and the anterior aspect of the leg formed almost a half-circle from bone to bone. A few small vessels required ligature in the wound. The whole surface was lightly washed with a chloride of zinc solution (40 grs. to ℥j), and then with carbolic solution (1 in 40); stitches were inserted and three drainage-tubes, iodoform powder, gauze, and salicylic wool applied with a gauze bandage. The

limb was replaced in the splint, having been enveloped in cotton wool applied under a flannel bandage. The margins of the opening in the vessel were covered with granulations, which appeared somewhat exuberant. The popliteal, which seemed smaller than usual, and the upper parts of the vessels removed, were apparently normal. There was no atheroma or softening.

I may mention that examination of the internal organs showed no sign of disease. The heart was normal, and there was no albuminuria. Subsequent examinations confirmed this statement.

December 29.—He had slept for two hours after an injection of morphia. Complained of no pain, and had had no sickness. There is no discharge showing through the dressings. The toes are warm and there is sensation in them, but he cannot accurately define it; says that the middle toe is touched when one touches the little toe. They are pale, and the colour varies but little on pressure. At 10.30 P.M. the pulse was still rapid—130, full. Tongue furred, breath foul, perspiring gently. Temp. 103·4°. Toes quite warm and slightly pink in colour, varying with pressure. Complains of uneasiness in the toes, but cannot localise it. His expression is good, says that he is comfortable and has completely lost his pain.

December 30.—Had morphia (quarter of a grain) last night, after which he slept for half an hour, waking up in a profuse perspiration. After this he continued to doze at intervals. Takes nourishment well. Temperature at 8 A.M. 102·4°. At 1.30 P.M. the leg was re-dressed, the discharge having come through; this consisted of serous oozing and a little blood. The wound was syringed out. Some swelling was present over the tibia; with discoloration in the neighbourhood of the wound, and the stitches were somewhat drawn upon. The ankle is still œdematous, and the foot and leg pale but warm; the colour does not appear to change much on pressure. Sensation in toes imperfect. 4 P.M.—Pulse 120, full but compressible; temp. 102·6°.

December 31.—Is comfortable excepting for occasional pain shooting up from the heel to the toes. Pulse 112, temp. 101·8°. Was restless during the night, and wandered slightly in his sleep. 11.30 P.M.—Wound re-dressed; there was a sour smell; no bagging in the calf of the leg; upper part healed by first intention, lower part around the lowest drainage-tube sloughy on the surface, and almost waxy in appearance. Leg slightly œdematous, and skin shiny over the middle third of

the tibia. Foot warm, but sensation imperfect. Temp. 102·2°.

January 2, 1888.—He looks a good deal better this morning and feels very comfortable, excepting for slight pain at times running into the foot. Wound re-dressed; there is a good deal of suppuration, especially at the lower end of the wound, and very offensive smell. A number of small pieces of disorganised clot were syringed out of the wound. The sutures were removed; fair union had taken place between the tubes. Temp. 100°, pulse 98.

January 3.—Perchloride of mercury solution (1 in 1000) used instead of the carbolic solution, and the wound dressed twice a day, sloughs coming away with syringing. Temp. 99°. From this date until the end of January there was much discharge, and sloughs were constantly washed away, some of them being of large size, but it was not possible to say from what part of the wound they were derived. The perchloride solution did not succeed in diminishing the offensiveness of the discharge so carbolic acid was again used on January 8, and boracic acid substituted for this on February 15. Meanwhile the general condition of the patient improved, he lost his anxious aspect and put on flesh. For some time he was unable to sleep without morphia, but was gradually weaned of what was becoming a habit. The temperature between January 3rd and February 20th did not at any time rise above 100·8°, and was generally under 99°, rising without apparent reason to 100·4° on four occasions in the evening. The morning temperature was usually normal or subnormal.

January 20.—The leg and foot have become of almost normal size and appearance excepting for the wound. The sensation still imperfect. The circulation in the foot appears good, but none of the arteries of the foot or ankle can be felt. On the posterior aspect of the leg in the position of the external saphena vein is a large artery which can be traced down the middle third of the leg, but becomes lost about the middle of the lower third. The superior internal articular artery is also distinctly enlarged, and can be felt winding forwards towards the anterior part of the knee-joint. All the wounds above the upper tube united by first intention, the lower two thirds present a healthy granulating surface about six inches in length, in which are the two lower openings for drainage-tubes; the cavity is much diminished in size, the leg feeling much firmer; the tubes have been shortened three times.

By February 15 there was further diminution in the size

of the cavity, but a probe could be passed across to the outer side of the leg, and struck bare bone on the posterior surface of the tibia over a considerable area.

On February 20 the drainage-tubes were all removed. Next day he was feverish, the temperature rose to 101·2° at night; on the following morning it had fallen to 98·6°. The upper part of the scar was found to be undermined by pus, and there was an enlarged and tender gland in the femoral region. A small incision was made, and a piece of drainage-tube introduced. The temperature was 100° at 8 P.M., but became normal next day, and continued so—excepting on March 5 (100° P.M.), 14th (102°), and 15th (100·2°)—until the evening of the 17th, when it was 100·6°, and he complained of pain in the leg; there was no evidence of inflammation about it. The pain continued, and on the 18th the temperature rose to 102·2° at night, and next morning the wound looked red and angry. The redness and swelling increased, the temperature rose to 103·4° P.M. from 99·6° in the morning, and reached 104·6° by 5 A.M. on the 20th. On this date the redness was spreading with a defined raised margin, he suffered from vomiting and severe headache, rapid pulse, furred tongue, and there was no doubt about the presence of erysipelas. He was accordingly transferred to the Erysipelas Ward. This was a very sharp attack; the redness spread up the thigh and down the leg, the temperature kept high, being usually 104° or above at 8 P.M., and from 100° to 104·2° at 8 A.M., with considerable constitutional disturbance for some days. On the fifth day of the attack the right knee-joint, which had been gradually filling with fluid, was tense, and there was œdema around it, with pain on movement. It was aspirated, and five and a half ounces of glairy yellowish fluid drawn off, yielding on standing a purulent deposit. After this tapping the temperature improved, becoming a degree or so lower in the evening; the fluid reaccumulated slowly, he suffered from profuse perspirations and slept badly at night from the starting of his limb. The pulse was rapid, hard, and not easily compressible. The tongue was red and dry, but he took food well. On the tenth day the inflammatory swelling of the leg had diminished, though it was still marked in the most dependent parts laterally, and the granulations were very œdematous. The joint was not tender, and there was no jumping. On the fourteenth day the erysipelas had left him, but the joint was full of fluid, and again required aspiration on the eighteenth day, when two ounces of purulent fluid were removed. Whilst

in the Erysipelas Ward a slough formed on the heel, and it was not until May 12 that this separated.

On April 24 his general condition had improved, he was taking food better, and was more inclined to help himself. There was generally some discomfort about the foot in the evening, and the temperature rose to 100° and 101°; there was not at this period any great amount of discharge from the wound. The swelling of the knee-joint had been gradually diminishing in size since the last aspiration on April 7, during the whole of which time an ice-bag has been kept constantly applied, the joint being now to all appearances free from fluid. There was, however, some thickening to the inner side of the patella, and a rough crepitus which could be felt about a week previously had now disappeared; active movement, though limited, was painless.

On June 5 the following note was made. The wound having made absolutely no progress lately, and there being more discharge than could be accounted for by what was apparent on the surface. Mr. Battle this morning had the patient placed under ether, and slit up the cicatrix between the upper and middle openings. All the tissues cut through were very vascular, the oozing of blood being very free, although no artery required ligature. The cavity made extended nearly to the outer side of the limb, and was about 2½ inches in length. The sinuses which had contained drainage-tubes were scraped with a sharp spoon. The lower opening was also examined and scraped. No bare bone was found. This opportunity of bending the knee was used, and many adhesions were heard to give; it was not, however, fully flexed. The wound was plugged tightly with carbolic oil lint, the limb wrapped in cotton wool, and a bandage lightly applied. For some time the discharge was much increased, and the wound looked sloughy, but with appropriate applications and daily plugging it had healed by August 14, with the exception of a little superficial sore.

The history of the wound in this case is one of repeated disappointments; before the attack of erysipelas on March 20 there had been a few rises in temperature, each accompanied by a breaking down of some of the newly formed tissue; and after that date for a considerable period as the wound closed up more fully the attacks increased in severity. To describe one is to describe all, allowance being made for the variations in the extent of the part affected and corresponding rise of temperature. As an instance:—

"On July 6 the patient was quite well in the morning, in the evening he complained of some pain in the wound.

"July 7.—Redness around the upper part of the wound with œdema; there was no definite margin to the redness. The femoral glands were enlarged and tender. Lead lotion was applied."

"July 9.—A great deal of discharge from the upper wound, and the whole of the upper part of the scar appeared to be undermined. The redness was much less and the pain gone. His temperature had fallen to 99°.

"July 16.—Wound granulating from the bottom, very little discharge, and that healthy."

Each attack was accompanied with enlargement of the femoral glands, and subsided on the discharge from the newly formed scar tissue of purulent or sero-purulent character. It appeared to me that these attacks might be due to inability of the scar to consoldiate, from its extent and situation, so great attention was paid to the application of the splint. It was afterwards considered that the reason might be due to the fact that the muscles of the calf were too tense, not allowing of contraction of the scar, and a division of the tendo Achillis was done to allow of the contraction.

Mr. Robinson did this on September 8, and afterwards placed the leg and foot in plaster-of-Paris splints. The knee was then moved and some adhesions broken down.

On September 12 he was up and going about on crutches. The superficial parts of the scar gave way again after this, and kept him in bed for a time, but the scar appeared firm when he went to Bexhill Convalescent Home on October 27. The scar broke down several times afterwards, but the wound had closed when the man was shown to the Society at the last meeting of the session 1888–9.

I wish to thank Mr. Croft for having given me permission to look after the patient, and Mr. F. R. S. Milton for his unremitting attention to him.

It is probable that amputation would have been performed when the extent of the mischief was revealed, but the patient who in the morning had given his consent to amputation, refused it before going under ether, and I was not told of this until the question was discussed, when it was too late to do more than a conservative course.

It seemed to me that, on account of the rare character of the case, it might be worth while to search medical literature for cases of a similar kind and in a similar situation. I

have found but few, and most of them were easy of diagnosis, there having been a well-marked pulsation in the tumour during some period of its growth.

Guthrie, who acted as surgeon to the troops during the Peninsular War, treated a case in which there was a rapid swelling of the calf, with a history of a smaller pulsating swelling preceding it. There had been a rupture of a posterior tibial aneurysm.

In a case of aneurysm of the posterior tibial resulting from a wound of the calf of the leg seven months previously it was proposed to try Esmarch's bandage, but the result is not given.*

A man æt. 34, admitted with a tumour in the middle of the calf, pulsating and with a well-marked bruit. It dated from six months before, and a swelling was noticed directly after he had jumped a fence, feeling at the time something give way in the calf. There was a curious history in the case. It was said that nineteen years earlier he had received a wound in the calf of the leg whilst bathing, from the spine of a stingaree fish (*Trachinus draco*), and Gross was inclined to think that the aneurysm was the result of rupture of the cicatrix of the artery which formed then. He ligatured the posterior tibial through an incision four inches in length, and the man recovered.†

A postman had received a wound from a knife in the upper and inner side of the left leg five weeks before admission. Spence made an incision about eight inches in length through the gastrocnemius and soleus muscles, and evacuated pus and clot. The posterior tibial had been injured close to the popliteal, and also one of the venæ comites. He applied a ligature above and below the wound in both the artery and vein. A ligature was also applied upon the anterior tibial just below the bifurcation of the popliteal. The ligatures were left hanging out, and the foot covered with cotton wool and slightly elevated; they separated in eight days, and the man recovered.‡

* *Brit. Med. Journ.*, 1878.
† Gross, *Phil. Med. Times*, vol. ii, p. 374.
‡ Spence, *Med. Times and Gaz.*, 1872.

XI.—*A Traumatic Aneurysm following a fracture dislocation of the spine in the dorso-lumbar region, presumably connected with the lumbar arteries.* By W. G. Spencer. *Read January* 10, 1890.

THE case was under my care at the Westminster Hospital during Mr. Davy's absence, and I am indebted to Mr. De Renze for the notes.

W. T., æt. 58, a thin, haggard-looking man, had always been well until the accident. There was no history of syphilis, and he is sure that his back was sound and straight until the injury.

In July, 1888, whilst painting on a scaffold at an infirmary he fell thirty feet, and remained insensible fifteen minutes. He was put to bed in the infirmary, and told that no bones were broken. He stated that his back was not examined. He felt much bruised and shaken: he had difficulty in bending his back, and pains in both his legs.

Four days after the accident he went home. He was able to stand and walk, but it caused such pain in the loins and legs that he had to keep in bed. Later on he returned to the infirmary, and the injury to his back was recognised. He said that during this time the urine was thick, and had a sediment, but he had no incontinence of urine, nor loss of power in his legs.

Later on, the actual cautery was applied on either side of the angular prominence, but quite superficially, without influence. Also a plaster jacket was applied but without relieving the pain. On one occasion only he passed about a pint of urine, very largely mixed with blood-clot, shortly after getting out of bed.

In August, 1889, I found him complaining of a constant burning pain across the loins and down his left leg, both back and front, to the knee. There was no pain in the right leg. He did not complain of any vascular troubles.

There was an angular curvature of the spine, caused by a prominence of the spinous processes of the eleventh and twelfth dorsal, and first lumbar vertebræ. The prominence of the angle suggested that one vertebral body had been

partly crushed. On either side of the prominence was a pulsating tumour extending from the tenth rib downwards for four inches, and to the side for two inches from the outer border of the erector spinæ. The skin was not raised above the general level, but pulsations could be seen by looking obliquely. When the fingers or the stethoscope were applied, they were raised up half an inch by each pulsation. Both tumours were clearly expansile on palpation, and the pulsation was approximately symmetrical. No bruit was heard. No abdominal pulsation nor swelling could be felt. On deep epigastric pressure he complained of pain, but it seemed no more than might be expected. The iliacs, and the femorals, and the circulation of the lower limbs were quite normal.

The heart was affected by aortic valvular disease; the pulse had markedly regurgitant characters. The brachial arteries were very tortuous, especially on the right side. At the bifurcation of the left carotid there was a fusiform aneurysm, about 1½ inches in diameter.

The patella reflex on both sides was greater than normal. There was impaired sensation, tactile and to temperature, of the sole of the left foot, and of the dorsum up to the malleoli. On the right foot sensation was normal to 1½ inches below the malleoli. The right thigh was less in circumference by one inch than the left. There was no paralysis. Micturition, defæcation, and the urine were normal.

He remained in bed from August to the beginning of December. He was weak, and his appetite was very bad. In consequence no attempt was made to restrict his diet. He took iodide of potassium, fifteen grains daily. For the first two months the pulsating swellings in the back seemed to diminish a little, but during the last month there was a decided increase and a loud bruit became audible at one place on the left side. The tumour could be felt to extend for 6 inches from the spine on the left, and 4 inches on the right. The carotid aneurysm remained unaltered. His pain across the loins and down the leg was the same. The impaired sensation of the feet improved, so that anæsthesia was limited to the toes.

He wished to leave for the Chertsey Infirmary in order to be near his friends, but I hope by the kindness of the visiting physician to watch him.

My colleagues at the Westminster Hospital saw the patient with me on several occasions, and they all agreed that the tumours in the back were pulsatile and expansile, and also that no abdominal pulsation nor tumour could be felt. I

intended to show him to the Society, but on the appointed day the tumours had become larger, and there was more pain.

If the history is correct the fracture dislocation must have been firmly impacted from the first, or he could not have walked out of the Infirmary four days after the accident. There is no history relating to the vascular changes, for they had not attracted the attention of the patient before I found them.

A pulsating expansile swelling on either side of the spine, which has increased somewhat in three months, and over which a bruit is heard, must be an aneurysm, and if an aneurysm, traumatic in origin, predisposed to by the arterial disease. The absence of abdominal tumour or pulsation excludes almost certainly any direct connection of the aneurysm with the aorta, renal or splenic arteries, because all aneurysms of these arteries tend to enlarge in the direction of least resistance, *i. e.* forwards, so as more or less to fill the abdomen. There remain, therefore, only the lumbar arteries. If we allow that the aneurysm has a part of the lumbar fascia in front of it, the direction of least resistance may be backwards and outwards. The approximate symmetry of the tumours and of the pulsation suggests that lumbar vessels from both sides are supplying the sac of an aneurysm which is hour-glass shaped, having its long axis transversely, and narrow in front of the spine.

If this be a case of aneurysm connected with the lumbar arteries, then I cannot find another case recorded. Heffinger describes a rupture of one of the right lumbar arteries close to its origin from the aorta. But this formed a large abdominal aneurysm; and an abdominal aneurysm frequently arises from the back of the aorta, about the origin of the lumbar arteries. An aneurysm of the lumbar arteries is *a priori* most unlikely, because of the planes of fascia between which they run; and the *a priori* view is in agreement with clinical facts, viz. that none are recorded. Still, the view above given seems more likely than to suppose an aneurysm arising in close connection with the aorta bulging backwards instead of forwards.

It is to be regretted that the pain does not appear likely to be relieved. It dates from the accident, and appears due to the pressure on the posterior column of the spinal cord by the laminæ. Such pain might be relieved by removal of the laminæ, but the patient has extensive arterial disease, and an aneurysm on either side of the spine with uncertain anatomical

connections. The aneurysm might be treated by Moore's method, but in the first place the aneurysm does not seem to be the cause of a great part of the pain which he suffers, and to the uncertainty of Moore's treatment there are added those which surround the aneurysm. On one occasion some months after the accident he passed clotted blood. Of course that may possibly have come from an injured kidney, but it seems very unlikely that the blood had any connection with the aneurysm. The patient is still eager to undergo some operation in the hope of easing the pain, but as yet I have seen no prospect of relieving him.

A photograph of the patient and a clinical drawing of the various lesions were shown.

Reference: Heffinger, "Traumatic Aneurysm the Result of Rupture of one of the Right Lumbar Arteries," *Boston Med. and Surg. Journ.*, 1879, pp. 221—225.

Addendum (April 30, 1890).—I saw the patient in the Chertsey Infirmary, with Dr. Melsome, of Addlestone, on April 29th. He was taken to Chertsey by Mr. Davey, in his ambulance, since which time he has continued in bed, suffering great pain. The physical signs of the aneurysm have not altered. He tried a short time ago to get out of bed. This was followed by hæmaturia for several days, and from that time until the present by tympanites and pain on palpation, as of slight chronic peritonitis. No abdominal pulsation can be felt.

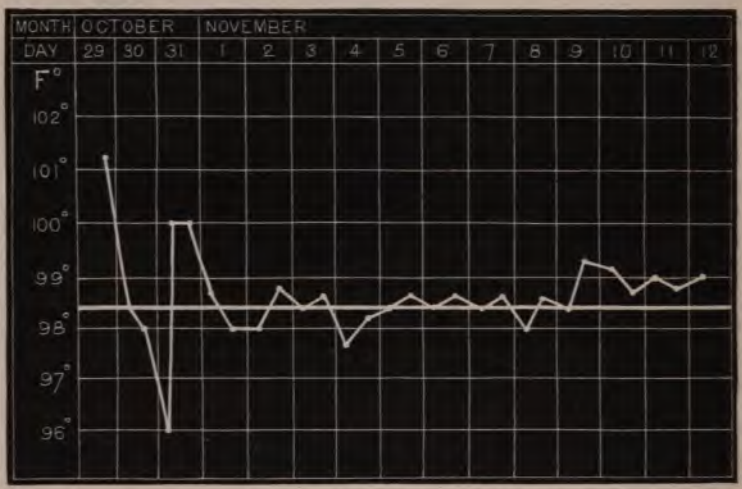
XII.—*A case of Hæmorrhagic Varicella and a case of Gangrenous Varicella.* By JAMES ANDREW, M.D. *Read January* 10, 1890.

E. P., æt. 8½, a boy in Christ's Hospital School at Hertford, was admitted into the School Infirmary at 1 P.M. on October 29, 1888. He complained of some soreness of the throat which had begun that day, but said that he did not feel ill. At 3 P.M. he was looking very pale, and was therefore put to bed. Shortly afterwards he was violently sick; the vomited matter consisted of undigested food, in which were a few clots of blood the size of hazel-nuts. He vomited three times between 3 P.M. and 11 P.M.; the consistence of the vomit was about that of thin pea soup; the colour varied from yellowish grey to grass-green and yellowish brown, and some blood was also present in it. At 10 P.M. he passed a semi-solid stool, containing no blood, but blackened by iron, which had been prescribed a few days previously for debility without any definite symptoms. There was no abdominal pain or tenderness. The urine acid, sp. gr. 1030, containing no albumen or sugar. Temperature at 6 P.M. 101·2° F.

October 30.—Passed a sleepless, restless night; vomited five times. Could retain food only in small quantities. Passed a semi-solid stool intermixed with dark blood. During the day sickness continued, and he passed three stools containing blood, the first tar-coloured, the last bright red. No abdominal pain, tenderness, or distention.

October 31.—The night was again sleepless and restless; the vomiting continued, and he passed six stools containing bright blood and mucus. He became collapsed, pulse feeble and irregular, respiration shallow and sighing, extremities cold. Temperature in mouth 96° F. In the course of the day the vomiting subsided, but he passed two stools containing bright blood and mucus, and the temperature rose again to 100° F. On the extensor surfaces of the elbows and on the ankles there came out a hæmorrhagic eruption, the spots of which varied much in size. The diameter of the great majority of them was between 1 and 5 millimetres, the larger ones being somewhat elevated in the centre. On the ankles, however, there were four larger spots, three on the

right and one on the left, presenting characters peculiar to themselves. These were about 10 mm. in diameter, the centre was raised over an extent of 1 mm., and radiating from this were several very slightly elevated lines of hæmorrhage, of a darker shade than the intervening segments, which nevertheless were also themselves hæmorrhagic. The spots, however, were scarcely so regular in outline as this description would seem to imply, presenting the appearance of ecchymoses with dark centres, but elsewhere varying much in depth of colour.



November 1.—During the night he slept fairly well, the vomiting did not return, but he passed two stools containing blood. A general eruption of a different character, and resembling abortive varicella spots, came out; mingled with it were a few small hæmorrhagic spots on the legs, thighs, and nates, and a very few smaller ones on the front of the chest. On the right forearm there was a well-marked varicella spot. With the appearance of this rash temperature fell to 98° F.; he looked much better, took his food well, and passed two stools of a yellowish colour and free from blood.

From this time he convalesced rapidly, the urine was never found to be albuminous, and on November 12 he was discharged from the Infirmary, the crusts having all separated; only two pits were left, one on the back of the right forearm about two inches below the olecranon, the other on

the back of the left upper arm about two inches above the olecranon.

So far as we can learn, his only previous illness had been measles in the spring of 1888.

In August, 1888, he was vaccinated for the first time, and on the left arm there are two good vaccination marks.

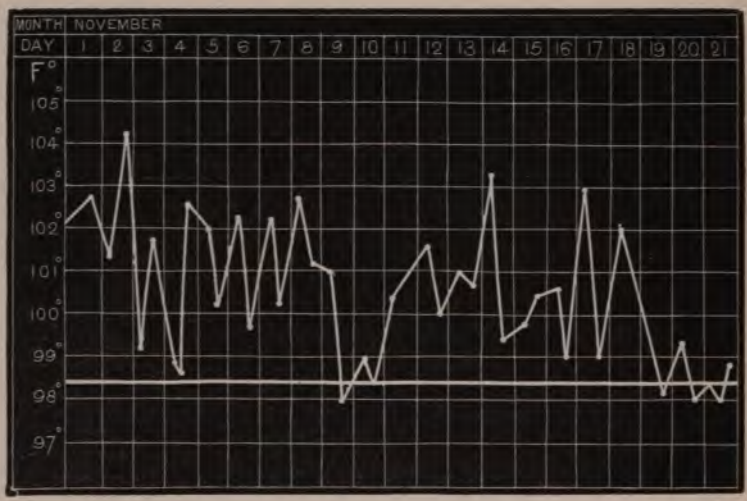
In his native place, Skibbereen, there are said to have been no epidemics of typhoid fever, diphtheria, or of smallpox for at least ten years. He came to Hertford for the first time on September 10, 1888, and, so far as can be ascertained, had, after that date, been exposed to no kind of infection except that of varicella and perhaps of diphtheria. At any rate, no cases of scarlet fever, measles, or of smallpox occurred in the school, but there were some mild cases of diphtheria, the first of which was admitted into the Infirmary on October 27.

I am indebted to my colleague Dr. Tasker Evans, the resident medical officer of the school, for the notes of the case and for other details. I also saw the boy with him in the evening of October 30 and of November 5. My opinion on first seeing him was that he was suffering from the hæmorrhagic form of some eruptive fever, probably smallpox; but putting on one side our failure to trace any source of variolous infection, this diagnosis seems to me to be negatived by the boy's recent and successful vaccination, by the whole clinical history of the case, and especially by his recovery from symptoms of such great severity.

The epidemic of varicella in the school during which E. P.'s, illness took place began on September 28, 1888, when two cases occurred, and the last case was admitted to the infirmary on November 16. Including E. P. there were in all twenty-four cases, and twenty-two of these were certainly varicella, with slight if any constitutional disturbance. It is noteworthy that the only other severe case was admitted on October 30, the day after E. P., just at the time when the epidemic was at its worst, for of the twenty-four cases ten began during the four days from October 29 to November 1 inclusive. But the two boys came from different wards, and were in no way specially connected with each other.

I append a brief note and the temperature chart of the second case, from which it appears all but certain that it was one of varicella gangrenosa as described by Mr. Hutchinson in the sixty-fifth volume of the *Medico-Chirurgical Transactions* for 1882.

B. R., a strumous boy, æt. 9, was admitted into the infirmary on October 30, 1888 with varicella, the rash being already out. On November 1 his symptoms were very severe. Complexion was dusky, tongue thickly coated, breath offensive, appetite bad, bowels constipated, urine alkaline but not albuminous. The eruption was dark in colour though not hæmorrhagic, the spots numerous and large, some of them very large. After a time they became pustular, ulcerating and discharging offensive pus, and his general condition for several days was that of septicæmia.



I have failed to meet with any record of a hæmorrhagic form of varicella exactly correspondiug with this Hertford case, *i. e.* one in which such profuse, or indeed any hæmorrhage took place from the alimentary canal, or in which the eruption was so distinctly ecchymotic. But hæmorrhagic types are so far from uncommon among the congeners of varicella that there would be nothing surprising if, in spite of the mildness of the constitutional disturbance which, as a rule, marks that disease, such cases should from time to time occur.

According to reported cases the hæmorrhagic tendency in varicella may show itself in different modes and degrees.

1. Hæmorrhage may take place into a greater or less number of the varicella vesicles almost from the first appearance of the eruption. I am indebted to Dr. Cronk, of Repton,

for a brief notice of such a case in a youth æt. 17. With the appearance of the hæmorrhagic rash the temperature, which had been 103·2°, fell to normal. The hæmorrhagic vesicles lasted longer than the others.

The attack took place in December, 1887; in June, 1888, the patient was vaccinated, and had perfect vaccine vesicles. It is not likely that the illness in the previous December was variola.

2. A bluish erythema with small petechiæ scattered through it may precede the true varicella eruption by one or two days. Such a case is reported by Drs. Bérard and De Lavit in their "Essai sur les Anomalies de la Variole et de la Varicelle, avec l'Histoire de l'Epidemie à Montpellier en 1816, p. 223 et seq. In it epistaxis occurred twice.

A similar case, but without epistaxis, is recorded by Baader, of Basle, in *Corresp. Blatt für Schweizer Aerzte,* No. 19, 20, 1880.

3. Arthur Hoffmann published a case of hæmorrhagic nephritis after varicella in the *Berlin. klin. Wochenschr.*, No. 38, 1884.

XIII.—*A case of Desquamation of the Skin (in large flakes) in typhoid fever.* By HUMPHRY D. ROLLESTON, M.B. *Read January* 10, 1890.

WILLIAM B., æt. 10, was on September 5, 1889, admitted into Addenbrooke's Hospital, Cambridge, under the care of Dr. Donald Macalister, who kindly allows me to record this case.

History of present illness.—On August 23 was too ill to go to school, and took to bed; complained at this time of frontal headache, loss of appetite, and general malaise. Diarrhœa five or six times a day. No epistaxis or blood from the bowels. No sore throat. Has drunk out of pump in Newmarket Road, subsequently closed by the sanitary authorities.

Past history.—Fairly strong as a rule. Measles when a baby; occasionally has a cough.

Family history.—One of three; one dead of "inflammation of the lungs," other child healthy.

Present condition.—Bright and more intelligent than typhoid patients usually are.

September 5.—Slight frontal headache. Tongue moist and cleaning. No sordes on the lips. Pulse 108, dicrotic; respirations 28. Pupils rather dilated. Fingers peeling in rather small scales. Skin peeling off thorax, thighs, and abdomen in large flakes, about the size of a shilling. Heels and toes peeling in small scales. No rash anywhere on the body.

Abdomen: Liver dulness normal. Spleen not felt. Urine 1020, acid, no albumen, Ehrlich's test present. The urine was frequently tested, but no albumen was ever found. The amount of urine passed varied between 19 and 29 oz. in twenty-four hours.

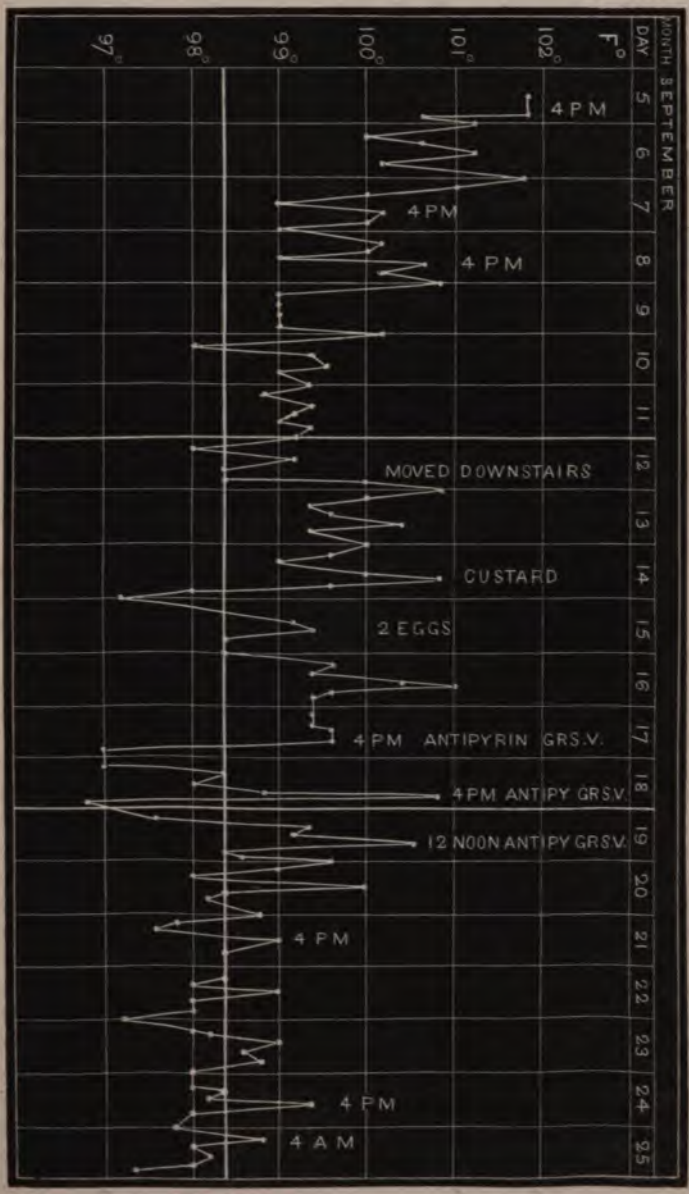
Thorax: Rickety, sternum pressed forwards, Harrison's furrow present. Moist sounds at both bases behind.

Heart: Dulness begins in third left interspace. Apex beat in fourth space, half an inch inside nipple line. Sounds normal.

Daily progress.—September 6.—Abdomen peeling in large flakes.

September 7.—Bad night. Frets a good deal.

September 8.—Eczematous eruption has come out on the


MONTH SEPTEMBER
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F°
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101°
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4 P M
4 PM
4 P M
MOVED DOWNSTAIRS
CUSTARD
2 EGGS
4 PM ANTIPYRIN GRS.V.
4 PM ANTIPY GRS.V.
12 NOON ANTIPY GRS.V.
4 P M
4 P M
4 A M

trunk, due to the irritation of washing and rubbing the delicate skin exposed by the free desquamation.

September 9.—More eczematous eruption on trunk. Temperature remains about 100° F. No signs now in the lungs.

September 11.—Bowels not open since the day of admission, scybala in sigmoid flexure, relief followed a glycerine enema.

September 12.—Moved from one ward to another.

September 13.—Not a good night. Temperature up without any apparent cause. Subsequently the temperature after oscillating for about eight days became almost normal, and the patient made a good recovery, being discharged well on October 16.

Remarks.—This case, which came under observation two weeks after the patient was too ill to be up, was regarded as one of enteric fever. The history of the malaise and diarrhœa after the onset of symptoms, the fever and the obstinate constipation when in the hospital, together with the slight bronchial catarrh, were the data for the diagnosis. It may be mentioned that there was an epidemic of typhoid in Cambridge at the time.

As noted above, there was marked desquamation of membranous flakes from the trunk and thighs, while the hands and feet peeled in small flat scales. Although the history did not suggest scarlet fever, and the distribution of the peeling did not correspond with that of scarlet fever, I thought it best to isolate the patient, not feeling satisfied as to the cause of this copious desquamation.

A branny desquamation in enteric fever, especially where there has been much sweating, and a copious eruption of sudamina is described by Murchison (*Continued Fevers*, p. 474), and may be often seen. In this case the desquamation from the trunk and thighs was in membranous flakes as big as a shilling, and in small scales from the hands and feet. No cause for this remarkable peeling was forthcoming, no poultices or turpentine stupes had been applied to the abdomen: there had been no rash of any kind, nor any sore throat. So the desquamation cannot be put down to any dermatitis or to scarlet fever. Occasionally in febrile attacks (in young subjects especially as far as I have seen) the skin does peel off without there being any evidence that the cause is a specific one like scarlet fever. In this case of enteric fever, in lack of any other hypothesis, I would suggest that the desquamation was dependent on an idiosyncrasy—a remarkable susceptibility of the skin

to changes in the bodily temperature. During this free desquamation the freshly exposed skin became irritated by daily washings, and an eczematous eruption resulted.

In the seventeenth volume of *St. Bartholomew's Hospital Reports* Dr. Church, in a paper on typhoid fever, records the case of a girl, æt. 19, admitted on the sixth day of her illness with a "red and rather livid throat" and a tender abdomen; no rash was seen. On the ninth day of her illness the spleen was enlarged, and on the tenth day typhoid spots were noted. She passed through an attack of typhoid. About a fortnight after admission, that is about the end of the third week of her illness, the patient desquamated very freely all over. This case Dr. Church regarded as one "of typhoid and scarlet fever concurrently."*

In the case I have recorded there was no history or evidence of any sore throat, and so no reason to suspect scarlet fever. In Dr. Church's case there were grounds—the lividity of the throat—which made scarlet fever appear likely. This case is the only one resembling my own that I know of. I have thought it worth while to bring before this Society a case of enteric fever in which there was very free desquamation, as such an occurrence must be very rare, and when it occurs may (as happened with me) lead to doubt about the diagnosis.

I should mention that although this case was admitted under Dr. Macalister's care, he did not see it until all desquamation had disappeared so that I am responsible for the above observations.

* *St. Bartholomew's Hospital Reports*, vol. xvii, p. 133.

XIV.—*Two rare cases of encysted Vesical Calculi in the male successfully removed by supra-pubic lithotomy.* By G. Buckston Browne. *Read January* 24, 1890.

During the past year I operated upon fifty-one individuals for vesical calculus. In eight of these cases it was found necessary to perform lithotomy, and in each case the supra-pubic operation was the one selected. All these eight cases were remarkable ones, and all illustrate the great advantages obtained by the hypogastric incision. In two of these cases the stones were not merely in pouches, but in genuine vesical sacs shut off from the cavity of the bladder by distinct necks; and I venture to think that they are of sufficient rarity and surgical importance to merit the honour of being brought forward to-night.

Case I. *A collection of small stones in a sac on the floor of the bladder, the neck of the sac being too small to admit a lithotrite.*—Capt. ——, æt. 68. Seen with Dr. Hardy, of Bournemouth, and Dr. Gimson, of Witham, who were both present at the operation subsequently performed. The patient was first seen on February 6, 1889. He passed all his urine by catheter. At night he was obliged to use the instrument every two hours; in the daytime he could sometimes go four hours. He had much pain, chiefly before catheterism, the desire to pass the catheter being so imperious that it amounted to severe vesical spasm. The most remarkable symptom, however, was great pain when sitting down. The urine was loaded with muco-pus. I sounded the bladder and found a stone.

On February 8 I performed lithotrity, and removed several calculi, consisting of uric-acid centres with considerable phosphatic incrustation; the débris weighed 114 grains. There was nothing particularly noteworthy about the operation, it was completed deliberately and with care, and the bladder appeared to me and to all present to be entirely cleared of stone. That this was so was proved by the way in which the urine cleared up, and at last became quite translucent, having

at first contained as much muco-pus as I have ever seen present. On the 27th the patient returned home. In a month's time (March) I saw him again; he was in good order, and could hold his urine six and seven hours. Towards the end of April he began to experience his old pain again when he sat down, and riding in a cab caused uneasiness. On April 27 he was put under the influence of an anæsthetic, and I removed from the bladder cavity three distinctly faceted calculi by means of a No. 16 (English) tube and aspirator, and finding another stone rattling against the end of the tube, too large to come through, a lithotrite was introduced, the stone crushed, and the débris washed out. The total weight was 46 grains. A small No. 6 sound was now passed, and nothing more of a calculous character found, until suddenly with reversed beak, and on the patient's left, the beak of the sound slipped into a little place which felt like a bag of small shingle. The sound could again and again be put into this place, but a prolonged and careful attempt to get in the beak of a lithotrite was unsuccessful, no stone whatever could be felt with this instrument; and the most persevering attempts with tubes and aspirator failed to wash out or dislodge a single calculus. At last, as I had not obtained the patient's consent to the use of the knife, I had reluctantly to bring the operation to a close. He was unquestionably relieved by the removal of the free calculi, but he returned to me again in a month with the old pains. The state of the case was explained to him, and on June 1 I opened the bladder above the pubes. A stone as large as a small bean was at once felt by the finger in the bladder cavity and removed. It was known, however, that this could not be the sole offender, but the finger searched unsuccessfully for more stone; trabeculæ seemed to cross the bladder walls in all directions, and there were many orifices of distinct sacs. I had to abandon digital exploration as being quite useless, and introduced through the wound a very short-beaked No. 6 sound and searched the region where through the urethra a month ago my small sound had found the bag of shingle, and which then escaped the broader beak of a lithotrite, and now had entirely eluded my finger. At last the small sound passed straight into a sac on the floor of the bladder and a little to the patient's left, and the mass of small stones was distinctly felt. Following down the sound with my left forefinger, the finger tip barely reached the orifice of the sac, and it could not be passed in until the rectal plug was removed and firm pressure upwards made by

the right forefinger passed into the rectum. In pressing the tip of the left finger into the sac I was conscious that the orifice was being lacerated, and bright blood began to flow. One by one with the left forefinger nail each calculus was evacuated from the sac into the general cavity of the bladder, and then removed by finger and scoop. This proceeding was naturally excessively anxious and tedious, and occupied an hour. The supra-pubic wound healed in two weeks, and the patient left town on the 29th June (four weeks), able to hold his urine seven and a half hours with ease, and has remained perfectly well ever since. He writes "Jan. 12," seven and a half months after the operation, "I am better perhaps even than when I left you; there is no appearance of deposit of any kind or mucus in the water; I go five, six, and seven hours between passing it; I wash out with plain water morning and night, but it seems as if that was oftener than necessary."

My only remark in this place in connection with this case is that while possibly the calculi may have been impacted just within the orifice of the vesical end of the left ureter, I do not think it likely, since there is no history of any attack of renal colic. I am more inclined to think that from long-standing prostatic obstruction the bladder had become sacculated in all directions, and that a sac just below and in front of the orifice of the left ureter offered itself as a convenient receptacle or trap for the stones as they came down through that tube from the kidney, and that occasionally a stone would work out of the sac into the bladder cavity and cause vesical symptoms.

Case 2. *Two large calculi in a vesical sac, forming an inguinal tumour, which had been treated as an ordinary hernia.*—General ——, æt. 74, consulted me on June 13, 1889, by the advice of Dr. W. J. Harris. The patient's urinary troubles had commenced some five years ago by complete retention of urine, relieved with difficulty by catheter, and resulting in severe prostatic hæmorrhage and a slow recovery to health. He had ever since been obliged to draw all his urine by catheter, and he now used the instrument about every four or five hours. The urine was thick and fœtid. He had constant and violent vesical spasm both before and after the use of the catheter: the former he called "wet spasms," when the bladder contained urine, and the latter "dry spasms," after the bladder had been emptied by the catheter. I was told that he had twice been sounded by an accomplished surgeon

in the country; on the first occasion it was thought a stone had been struck, but no calculus was found at the second examination. He could not bear carriage exercise, was much worn by his sufferings, and only tolerated them by the constant use of morphia and belladonna. For some years he had worn a truss for a right inguinal protrusion, which had come since his introduction to the use of the catheter. I sounded him, and found a stone in the cavity of the bladder, and all arrangements were made for the performance of lithotrity. The urethra measured ten and a half inches in length, owing to the great size of the prostate; and anticipating that the case might not prove a straightforward one, instruments necessary for lithotomy were taken to the house, as well as those for lithotrity. On June 17 Mr. Charles Moss administered ether. Three large stones were found lying behind an enormously enlarged prostatic middle lobe; these were crushed in succession, but I was conscious that much of the débris escaped my lithotrites and evacuating tubes, and a sound was introduced to make a careful exploration of the bladder. Much broken stone was felt in a very deep post-prostatic pouch, but upon making further exploration, to my astonishment, the sound, which was fortunately a long one and measured eleven inches, passed upwards, and to the patient's right, into what had been considered to be an ordinary inguinal hernia, and there encountered two large calculi. When the hand was placed upon the groin, the calculi and the end of the sound could be perfectly well defined grating one against the other. Such a case was obviously perfectly unfitted for lithotrity; that operation was therefore at once abandoned, and without moving the patient from the bed, the bladder was opened above the pubes, and the post-prostatic pouch and bladder and the large vesical sac cleared of their calculous contents by means of scoop and free irrigation with warm water. The débris from the bladder weighed nine drachms, and the two calculi from the sac, which are faceted, weighed respectively two and a half and one drachm. By July 10 (three weeks) the supra-pubic wound was soundly healed. The patient has since remained well and comfortable, and during the summer often swam in the open sea. He writes, "I am going on as well as possible, quite satisfactorily. No pain of any kind. Water clear. I never feel any pressure." And again (under date Jan. 12, 1890, seven months after operation), "The water is very clear now, and free from all appearance of mucus."

These cases are brought forward as surgical curiosities, illustrative of some of the difficulties both in the diagnosis and treatment of stone in the bladder with which the surgeon has often to deal, and also to show the great advantages offered by the supra-pubic operation. I think that the strongest advocates for lateral lithotomy will admit that it would have been a serious matter to operate upon the second of my cases by that method. The prostate was so very large and the middle lobe so developed that the evacuation of the stones would have been dangerously slow and difficult, for free bleeding must have gone on until the operation was completed; while as regards the first case the patient's life and comfort may be entirely credited to the supra-pubic operation, for it is impossible to conceive how he could have been relieved by any other means.

XV.—*A case of Calculus impacted in the Ureter: removal.* By George E. Twynam. Introduced by Rickman J. Godlee. *Read January* 24, 1890.

A. W., æt. 8, a well grown child, was brought to me whilst I was in charge of the Out-patient Department of the Prince Alfred Hospital, Sydney, in May, 1888, with the following history:

Sixteen months previously the child had been seized with pain in the stomach, followed by hæmaturia. This passed off under treatment, but recurred at irregular intervals, accompanied by pain over the lower part of the abdomen and at the tip of the penis on passing water, ceasing immediately after the act.

After two months the child was taken into the Children's Hospital, and remained there three months. Whilst there he was sounded, but no stone was found; the hæmaturia, however, ceased. After his discharge he remained well for some time, then the bleeding recurred about every three weeks.

When seen by me the child was very pale, and complained of the same pain, whilst a specimen of urine had a thick deposit of coagulated blood. On careful sounding no stone could be detected.

The family history was as follows:—The child was born in Queensland, but was removed when five months old to New South Wales. From that time he had lived on the diggings, where the drinking water was very bad, until a few months—which were spent in Sydney—before he was taken to the Children's Hospital. The father and mother and seven other children are all alive and healthy.

The boy's urine was repeatedly examined by myself and others, and varied greatly—sometimes it was clear, without deposit, but very often it presented a thick coagulum of clotted blood. Constant microscopical examination showed blood-cells and numerous very large mucous casts, altogether too large to come from any part of the kidney. No trace of Bilharzia could be found at any time, nor any particles of villous growth.

This condition lasted until the middle of June, 1888, when the child vomited a round-worm. After this he was free from hæmaturia for a month.

At the end of July the bleeding recurred frequently, and the child became very weak. At this time he was put under chloroform, the bladder was sounded very carefully, and searched with a small lithotrite for villous growth, and washed out, whilst the abdomen was palpated and examined per rectum—without result.

September 15, 1888.—He was admitted to the Prince Alfred Hospital and kept in bed, when he improved considerably in health and passed but little blood. A note on October 19 states that the urine was pale, with slight cloud of mucus and a few blood-discs when examined in the morning, but that passed in the afternoon was quite red from the admixture of blood.

Again on October 23 the urine passed in the evening was quite red, whilst the next passed was quite clear, except for a slight red tinge in the deposit. The boy always complained of pain over the pubes, and also at the tip of the penis on passing water, ceasing immediately after the act—irrespective of the state of the urine.

During the time he was in hospital his temperature varied from 97° to 100°, being subnormal on the occasions when the blood was noted.

The boy left the hospital on November 15, there having been no hæmaturia for three weeks before his discharge.

From the time of his discharge in November, 1888, until his readmission on January 14, 1889, the child was under observation.

The hæmaturia only recurred slightly until Christmas, when the child complained of great pain at the umbilicus and in the left loin at short intervals, with a recurrence of the bleeding. The mother stated he had been very feverish at times corresponding to the attacks of pain.

On admission, January 14, 1889, although he complained of no pain other than in passing water, his temperature was 104°, but the urine contained pus and mucus, reaction acid, sp. gr. 1008, and microscopically pus, bladder epithelium, and débris, but no casts.

On examination the superficial veins over the abdomen were plainly marked. The abdomen was slightly distended, and the left side tenser and fuller than the right, whilst some fulness could be detected in the left loin. On sitting up or standing the patient inclined to the left side; and on attempting to straighten him he complained of pain in the region of the left kidney.

On January 18, morning temp. 97·8°, evening 103°, and on 19th, morning temp. 104°; but the urine was clear, except for a slight deposit similar to the above.

After this the temperature fell until the 27th, when it rose to 103°, the child being flushed and hot, but in no pain. The fulness in the flank was not to be detected, but tenderness on deep pressure was present, as well as the inclination to the left side.

On January 31 the temperature rose to 104°, but there was no rigor—urine same as before.

February 6, 1889.—After consultation an exploratory incision was made on the left side to examine the kidney—Langenbech's operation.

Nothing abnormal was found on the left side, either in the kidney or ureter. On the right side no calculus could be detected in the kidney, but a small hard calculus was found impacted in the right ureter just below the brim of the pelvis, about two inches from the bladder, and when pressed down it could be felt by the finger in the rectum.

Under the circumstances the calculus was left *in situ* and the abdominal wound sewn up.

The wound healed well, and the temperature remained practically normal until February 23, when it rose to 106°.

Three days, however, after the operation the child had an attack of convulsions affecting the whole body and lasting for an hour—he remained unconscious afterwards for some hours, but eventually quite recovered.

Just at this time a boy of the same age and build died from an accident, and I attempted two or three operations on the cadaver to find out the best way of reaching the impacted calculus.

Post mortem I found this boy's ureter only admitted a No. 6 E narrowing down to a No. 3 E at the bladder, whilst for comparison the ureter of a healthy adult admitted only a No. 8 E narrowing down to a No. 5 E at the bladder.

These facts decided me neither to attempt to push the stone, which I knew to be larger than a No. 8 E, on into the bladder, nor to dilate the ureter from a supra-pubic wound.

I therefore determined to reach the calculus by an operation similar to that for tying the common iliac. Accordingly, on February 27 (the temperature having fallen to normal, on February 26) I made my incision in the right hypogastrium. The operation was straightforward enough until I reached the neighbourhood of the ureter, which of course was raised up

with the peritoneum. I had some difficulty in reaching the ureter, which formed the deepest side of the triangle with the iliac artery and obliterated hypogastric, but by the aid of an assistant pressing the stone upwards I was enabled to separate the pouch in which the calculus was contained. I then incised the upper part of the sac in the length of the ureter, and extracted the stone with fine forceps. It weighed gr. vj, had just the diameter of a No. 12 E catheter, and was composed of uric acid.

I then sewed up the wound in the ureter with a fine curved eye needle and eye silk. This was the most difficult part of the whole operation, working at such a depth in so small a subject. The end of the silk I threaded on a probe and passed through a piece of fine drainage-tube to be sure that my tube reached to the ureter—bringing the tube out at the upper angle of the wound—which was closed with silk sutures and dressed with salicylic wool.

The child was kept as much as possible on his right side to facilitate drainage. For the following three days the dressings had to be changed three times a day, as they were soaked with urine.

Evening of the fourth day temperature rose to 103·6°, dropped in the morning, but went up again to 103° the following night. The sutures were removed as some suppuration appeared at the wound.

The quantity of urine passed *per urethram* was, on the second day, 30 oz.; third, 38 oz.; fourth, 19 oz.; fifth, omitted; sixth, 16 oz.; seventh, 26 oz.; eighth, 12 oz.; ninth, 16 oz.; tenth, 24 oz.; eleventh, 22 oz.; twelfth, 32 oz.; thirteenth, 32 oz.

After March 4 (fifth day after operation) no urine discharged into the dressings, and the drainage-tube was taken out. The temperature rose again on March 12 and 15 owing to a little suppuration along the track of the silk sutures, after which the wound closed completely.

March 20.—The urine is normal, and there has not been the slightest indication of pus for over a week. The boy was discharged on March 20 quite well, except for a little stiffness on that side, which a fortnight's change of air completely removed. He has been quite well since, playing with the other boys in a large public school, and when seen on July 25, 1889, he was strong and hearty, and had had no recurrence of hæmaturia whatever.

This case shows the extreme difficulty in diagnosing

kidney cases, for all the symptoms pointed to the left side, whereas the calculus was found in the right ureter.

I think I should have delayed the second operation for a time, but I thought the great rise of temperature was probably due to blocking of the ureter, and therefore decided to operate as soon as it fell to normal.

I trust the interest of this case may be an excuse for the length of this paper.

XVI.—*Notes on a case of Excision of the Head of the Femur and Erasion of the Hip-joint through the anterior incision, and with immediate and permanent closure of the wound.* By CHARLES BARRETT LOCKWOOD. *Read January* 24, 1890.

THE child who has just been shown illustrates the results which may be obtained by treating acute suppurative arthritis of the hip-joint by excision and erasion with immediate and permanent closure of the wound. This method has been for some time before the profession, but as yet, so far as I am aware, an inconsiderable number of cases have been shown either at the Clinical or at the other societies. The following is the history of the case.

Thomas B., æt. 6, was admitted under my care into the Great Northern Hospital on March 6, 1889. He seems a delicate, rickety, and stunted child. A year ago he began to limp and suffer pain in the left hip, without having sustained any injury. He was taken to the Children's Hospital, Great Ormond Street, and treated, his mother says, for thirteen weeks with weight extension. He afterwards had a Thomas's splint, and did not attempt to walk. About the beginning of January, 1889, whilst still wearing the splint, his hip began to swell and be painful, and he sought admission. When I first saw him he was wearing a Thomas's splint, the leg being extended with the foot slightly everted. There was considerable fulness and œdema in front of the left hip, the common femoral artery being lifted up; there was also acute pain on pressure both in front of and behind the joint. The inguinal and femoral lymphatic glands, and also the iliac lymphatic glands, were very swollen and tender. The femur and pelvis moved together, and there was some lordosis. The tip of the great trochanter of the femur was displaced upwards, and there was at least half an inch of shortening.

The child was kept in bed and extension applied for a week, during which the local conditions about the hip-joint seemed to become gradually worse. The following operation was then performed. The hip-joint was exposed through the

anterior incision and the joint opened. A quantity of turbid fluid escaped. The finger being introduced, it was found that the head of the femur was displaced partially out of the acetabulum, the articular cartilage and epiphysial line being eroded, and the synovial membrane inflamed and thickened. The neck of the femur was sawn through, and the head removed. The acetabulum and interior of the capsule were then thoroughly erased with a sharp spoon and gouge. The whole wound was then abundantly irrigated with some pints of acid solution of perchloride of mercury (1 in 1000), and thoroughly rubbed with about a drachm of iodoform. The wound was then closed with silk sutures passed somewhat deeply and tied rather tight; these were the only sutures or ligatures which were used. A large alembroth dressing was put on, and considerable pressure applied over it with a rubber bandage, and a weight extension was also applied. The child vomited during the following night and once during the next day, at which time his temperature was 100° F., the highest point it ever reached. After this there was nothing to record in his condition. The operation was performed on March 13, and the dressings removed on April 1. The wound was practically healed, but two culture-tubes were inoculated from some moisture near its highest part; these remained quite sterile. The lymphatic glands were quiet, but still large. The Thomas's splint was put on about April 15, when there was no shortening of the limb, and on May 9 the child went to a convalescent home.

About the end of July he returned, with suppuration in the enlarged lymphatic glands. The abscess was opened and speedily got well.

The present (November, 1889) condition of his limb is as follows: There is hardly any perceptible shortening, but a good deal of wasting of muscles, good flexion and extension, good adduction, slight abduction and rotation, no pain. Has begun to walk, holding to table.

The pathology of this case of acute arthritis is not clear. Without further evidence I myself should not assume that it was due to tuberculosis. The chief interest seems to me to centre round the method of treatment which was adopted, and the success which, so far, seems to have resulted. This is attributable to the circumstance that, owing to the aseptic precautions which were taken, the wound remained sterile, as was shown both by the course it followed and by the cultures which were afterwards made from it. It is hardly necessary

to detail the precautions which were taken, for they are merely the same as those which are ordinarily used in aseptic surgery. For instance, for all aseptic operations, besides the preparation of the patient, I have the sponges prepared as if for ovariotomy; the silk, saws, and forceps are also boiled, and kept in carbolic lotion, 1 in 20, and except on urgent necessity no catgut ligatures are used, the vessels being clamped and not ligatured. Of late I have been accustomed to use perchloride of mercury lotion and alembroth dressing as being the most reliable.

With regard to the immediate and permanent closure of the wound, it is to be expected that if the wound can be rendered aseptic and securely closed it will comport itself like a simple fracture or any other subcutaneous wound. Also it ought to be as little needful to drain an aseptic wound as it is to incise and drain a simple fracture. This and other cases lead me to believe that this ideal can, after training and practice, be made the rule and not the exception.

The cases which have been treated by this method do not seem to show that it is a panacea for every acute arthritis of the hip. It is suitable for some which have characters the same as the foregoing, but before concluding that it ought to be applied to any case it is to be remembered that rest is a remedy which usually effects a cure, and entails but little risk.

Addendum (March 17, 1890).—The muscular development of the limb has recovered, and the child gets about rapidly and well without any assistance. Whilst walking, the femur ascends slightly, and he seems in the position of one who has a slight unilateral congenital dislocation of the hip.

XVII.—*Two cases of Thrombosis of the Cerebral Sinuses and Veins.* By Sir DYCE DUCKWORTH, M.D. *Read February* 14, 1890.

CASE 1. *A case of heart disease in which cerebral symptoms occurred due to thrombosis of cerebral sinuses and veins.*—A. L., a girl æt. 13, was admitted to Elizabeth Ward in St. Bartholomew's Hospital under my care on June 11, 1889, suffering from severe heart disease. (Dr. Wynne's notes.)

The history indicated that at the age of nine years she had an attack of chorea, and was treated in the Great Ormond Street Hospital. (This illness was attributed to her teacher having boxed her ears for not passing an examination.) There was no clear evidence of articular rheumatic ailment. She had been suffering from cardiac symptoms for three or four years, and a year previously had been in St. Bartholomew's Hospital for relief. Five weeks before admission she had an attack of measles.

The family history was satisfactory, save in respect of her mother, who had died after some months' illness with "pleurisy and inflammation of the lungs."

On admission there were well-marked signs of advanced heart disease. There was bloated, puffy face, with dusky hue; orthopnœa with alæ nasi working. Finger ends slightly clubbed. The pulse was feeble, regular, small in volume and not sudden, beating 132 in the minute. Respirations 50 in the minute. Slight teasing cough. Herpes on the lips. The legs and loins were very œdematous.

On examination there was seen a forcible impulse over the greater part of the left side of the chest. Expansion equal and fairly good. On percussion, the right front was hyperresonant to the fifth rib; on the left front, impaired resonance without increased vocal fremitus. The cardiac dulness began at second rib, and extended to the right edge of the sternum. The apex beat was in the seventh space in mid-axillary line.

On auscultation of the chest the breath-sounds were rough in front, and free from râles. Behind, there was dulness on percussion over lower two thirds of each lung, the vocal fremitus being strong over the centres and fading downwards.

At the cardiac apex was heaving impulse, following a præsystolic thrill. On auscultation a præsystolic murmur was heard at the apex, followed by a systolic murmur which was audible behind. At the ensiform cartilage a softer systolic murmur was heard, which faded to the left and merged into the apical systolic murmur. Over the left cardiac base some apparently exocardial friction-murmurs. At the right (aortic) base sounds rather feeble.

The abdominal walls were very œdematous, and there was some ascites. The liver was tumid, dulness extending for an inch below the ribs, but no edge was palpable. No enlarged superficial veins. Umbilicus obliterated.

A "dry" diet was ordered, and two ounces of brandy, twenty-four ounces only of liquid being allowed. Dr. Wynne, my house physician, ordered iron, digitalis infusion (ʒij), dilute phosphoric acid, and chloroform water, with a linctus, and a poultice to be applied to the back.

Two days later, frothy hæmoptysis occurred to the extent of an ounce. I ordered venæsection to four ounces from the right arm, and gave quinine with digitalis instead of iron. The pulse improved after the bleeding, and general relief was obtained. The sputa were rusty subsequently. Congestive pneumonia occurred in the left lung with bronchial breathing and bronchophony. The temperature on admission was 97°, and never reached normal all through the illness. From ten to twenty-five ounces of urine were passed daily.

On the 17th four minims of tincture of strophanthus were given (instead of the digitalis) with quinine. Vomiting occurring some days later, the strophanthus was omitted, the dose having been increased to six minims thrice daily in half an ounce of chloroform water. Citrate of caffeine in four-grain doses was now given three times a day, and to check the vomiting an effervescent soda draught.

On the 28th it was noted that the patient slept well, but complained of headache this day and the next.

On the evening of the 29th there was an attack of shaking in the left hand, followed by vomiting when the shaking ceased. An hour and a half later had a severer attack, lasting about ten minutes, getting worse as it went on. The girl screamed loudly, and drew attention to her condition. The left arm moved violently, and there was a good deal of working of the face, especially of the left eyelid, which winked rapidly, also some slight internal squint of the left eyeball. The mouth was somewhat drawn to the left side. The legs

did not move at all. Pain down the left arm was complained of. The movements stopped suddenly, the patient saying "she was all right now." The left arm was found quite powerless and anæsthetic. Nothing wrong was noticed in the face. Four hours later another similar attack occurred, the left hand being held rigidly in claw-like position. The extremities became cold, pulse hardly perceptible. Death in five hours.

During the severe attacks the left arm had a congested, mottled appearance, but retained sensation.

At the autopsy on July 1 the principal changes discovered were as follows (Dr. Ormerod's account) :

The heart was hypertrophied and dilated, weighing 13 oz. The mitral valve and its chordæ tendineæ were thickened, the aortic cusps also thickened. Large vessels natural. The lungs were collapsed. Much fluid in the right, and less in the left, pleural cavity. The liver was much enlarged and "nutmeg." The spleen was small. The kidneys were swollen, their capsules separating easily.

The cranial bones were natural. The right lateral, the superior petrosal, and superior longitudinal sinuses were distended with clot, which was adherent in places and decolourised. The adhesions were most firm at the centre of the superior longitudinal sinus. The cerebral veins were all engorged, especially one passing just posterior to the right ascending parietal convolution.

A clear explanation of the headache and of the localised convulsive attacks was afforded by the autopsy. The onset

of the pain was probably contemporaneous with the establishment of thrombosis in the longitudinal sinus, and the spasms in the left side of the face and left arm were induced by the extension of the process in veins which drained the respective centres of those parts on the right side of the brain.

The second case was connected with the puerperal condition.

CASE 2. *Two attacks of double phlegmasia alba dolens: cerebral symptoms: thrombosis of cerebral sinuses and veins: capillary apoplexies: hæmorrhage into the right lateral ventricle: hæmorrhagic softening of the right optic thalamus.* (Notes by Mr. Henry Huxley, Midwifery Assistant).—Sarah S., æt. 24, was admitted under Dr. Matthews Duncan's care into Casualty Ward on October 31, 1889. She had been married seven years, had had five children, the last born at full time, three weeks ago. Eleven months ago had a miscarriage. After her first confinement, five years ago, of a seven months' child, both legs swelled. The right leg has remained somewhat swollen since, but has not further enlarged in subsequent pregnancies till the last confinement. After getting up on the sixteenth day, a week ago, the legs began to swell, and have since been increasing in size. Poultices and hot fomentations were prescribed by her attendant, and were employed for a week, when the skin became red and sore.

On admission looks very pale and feeble, face sunken. Much swelling of right leg and thigh as far as the groin. Skin red and tense. Left leg also œdematous, but less tense than the right. A cord-like vein is felt in the left groin. The urine contained a small trace of albumen. Heart-sounds clear. No marked dilatation of superficial veins of the abdomen. The legs were wrapped in cotton wool and bandaged lightly.

November 4.—Left leg very much reduced, slight pitting on pressure. Right leg much smaller—redness and tenseness of skin gone.

November 12.—Quite well this morning. Legs less swelled; temp. 97·6°. Had chop and greens for dinner (12.30). About two hours after dinner vomited undigested food. Complained of frontal headache and aching of eyes.

Continued to vomit all food till the 13th at about 6 P.M., after which she kept down whey, brandy, lime water, and, later, a little milk. Still bad headache. No abdominal tenderness.

November 15.—At 4 A.M. vomited once. At 8 A.M., whilst being washed, appeared drowsy and complained of headache, worse especially on right side. The nurse noticed that her limbs seemed very weak and limp. About 10.45 A.M. found to be semi-comatose and could not be roused.

On examination.—Pupils normal; equal, react to light; no squint or deviation of eyes to either side; occasional movement of eyes from side to side.

Pupils dilated with atropine.—No optic neuritis; some slight blurring of upper part of right disc. Opens eyelids occasionally of her own accord; no discharge from ears. Does not respond when spoken to. On raising the arms they fall to the bed. If forearm only raised to right angle (whilst arm rests on bed) left falls at once, whilst right falls gradually. Some movements of fingers and hands (twitchings), especially of left hand. No alteration of colour—no blueness at any time; no dyspnœa; lies on back with head turned towards left; objects to head being turned on to right side, and rolls it back to left again. No apparent tenderness of head. Seen this afternoon by Sir Dyce Duckworth, who diagnosed the case as one of thrombosis in the cerebral sinuses; attempted feeding by nutrient enemata with brandy. These were not retained; Slinger's suppositories retained; takes food better by mouth this afternoon; no more vomiting; blister to nape of neck. Later in afternoon developed Cheyne-Stokes' breathing. Twitchings of arms and fingers (especially left), much increased towards evening, the arms being suddenly straightened and rotated inward (superpronation) with a jerky movement, whilst the hands were clenched, the fingers closing over the thumbs, which were flexed and adducted. When the fingers were forcibly opened and laid flat on the bed they picked at the clothes. Mouth slightly drawn to left side; no twitchings of face. Later the arms became more rigid, remained in an extended position, breathing became more rapid, face flushed.

November 16.—This morning dusky colour, breathing very irregular (no longer Cheyne-Stokes'), sweating profusely (as also during night). Arms rigid, right arm appears most so. Some rigidity of head and neck. Swallows liquid food fairly well after the first mouthful. Spasmodic movements of arms and hands, same as last night. Occasional slight movements of feet and legs.

The temperature, which was 96·4° on the evening of the 12th, continued to rise steadily, being 97·8° on morning of

15th, evening 99·4°, 16th, morning 100·4°, evening at 7 P.M. 106·6°, just before death.

Patient's condition remained much the same till 7 P.M., when her breathing became very laboured and irregular. Died at 7.10 P.M.; nothing noticeable in mode of death.

Diet.—From time of admission until November 12, when vomiting began, had two pints of milk, eggs, green vegetables every day. Baked apples. No alcohol until the 12th.

Post-mortem.—Thrombosis of cerebral veins (velum interpositum and neighbourhood). Thrombosis of straight sinus and right lateral sinus. Extreme congestion of both optic thalami, hæmorrhagic softening of posterior part of right optic thalamus. Thrombosis of veins of lower extremities of inferior vena cava and right renal vein. Remains of placenta in utero.

Dura mater and sinuses.—Straight sinus contained a clot which was not friable, not decolourised, not adherent, but it was somewhat firm and filled the vessel. Right lateral sinus and torcular Herophili contained a clot, which was partially decolourised and in places friable. It filled the vessel, but was not adherent.

Arachnoid and pia mater.—Normal.

Arteries.—Normal.

Brain.—Convolutions somewhat flattened. Right hemi-

sphere appeared somewhat bulged. On removing brain blood with some clot issued from right temporo-sphenoidal lobe, which had been wounded in opening the skull; this blood was found to come from the descending cornu of the lateral ventricle (right).

Corpus callosum somewhat thin and bulged upwards. The veins of the velum interpositum and adjacent choroid plexus were distended and firm, apparently from thrombosis. There was free blood-clot in both lateral ventricles, but most in the right. The choroid of each descending cornu was thick and puckered up.

Upon making the usual horizontal section outwards through the middle of the basic ganglia an area of congestion was seen, occupying tolerably accurately the optic thalamus of each side. It presented a kind of zigzag and punctated pattern formed by the cut ends of distended vessels. This was most intense in the right optic thalamus; the posterior and inner border of this right thalamus, where it abuts on the ventricle and its descending cornu, was broken down, soft and ragged (transverse sections showed that the congestion was mainly limited to the thalamus).

In the right crus (cut high up) there was still a small area of punctate congestion; there was none in the left crus. The pons, cerebellum, fourth ventricle, and medulla appeared quite normal. Apparently thrombosis began in the veins of the velum interpositum.

Lungs.—Congestion and œdema.

Heart.—Normal.

Vessels.—Superficial and common iliac veins of dark colour; on opening them their lumen was found to be quite obliterated, apparently from old standing thrombosis, for no distinct layer of clot could be separated from their walls. Internal iliac veins distended with clot. Inferior vena cava up to a point just beyond the right renal vein was filled with yellowish friable clot. Right renal vein distended with similar clot. Left renal vein normal. Some slight adhesions of liver to diaphragm. Spleen and liver normal.

Kidneys.—Left normal. Right rather large and soft, and the structure of its cortex not very clear, but it showed no distinct pathological change.

Bladder and ureters.—Normal.

Uterus.—Size of small apple; adherent to placental site was a yellowish mass, size of a walnut.

Os uteri.—Normal.

Remarks.—Cases of thrombosis of the cerebral sinuses appear to be very uncommon in connection with cardiac valvular disease and its well-recognised train of untoward events, and indeed are rare under any circumstances. The first instance I remember was that of an anæmic young woman under the care of my colleague, Dr. Andrew, in St. Bartholomew's Hospital in 1865. In that case the first symptom was gradually increasing headache, at first frontal, which prevented sleep. Vomiting occurred several times, then delirium and coma. The pulse became rapid and irregular. The veins of the choroid plexus and velum interpositum, veins of Galen, straight and lateral sinuses were distended with firm clots. Numerous clots were found in the optic thalami, which were softened and broken down. The arteries were healthy.* Thrombosis of the cerebral sinuses and veins is by no means of common occurrence. There are very few recorded cases, and as the brain is so constantly examined, the lesion could not often escape attention.

In the first case I have related the tendency to clotting was doubtless due to languid circulation in engorged veins. It is noteworthy that thrombosis should not occur with greater frequency under the conditions entailed by a feeble, dilated, and engorged heart, which so often arise towards the end of life in such cases. So-called "marasmic" thrombosis is not uncommon in children exhausted by prolonged diarrhœa, and is met with in the cerebral sinuses in these cases. That this condition is not always attended with definite symptoms is proved by my colleague Dr. Gee, who has met with a case in which the superior longitudinal sinus was blocked with attendant large subarachnoid hæmorrhages, and in which no symptoms during life drew attention to this state. In most cases there are definite symptoms, albeit very variable, but when present they are commonly grave.

In the second case there was marked tendency to blood-clotting, white legs having occurred after two, though not consecutive, pregnancies. In this instance there had been unskilled attendance at the last labour, the placenta having been partially retained. Notwithstanding this untoward complication, there were no septic features in this case, yet we may fairly take this as the originating factor for the subsequent thrombosis.

The circulation was languid, and the patient was anæmic

* Vide vol. xvi *Path. Soc. Trans.*, p. 27, 1865. (The preparation is preserved in the hospital museum, vi, 86.)

and in feeble health. I think there was history of a good deal of hæmorrhage in the confinement, though I see no mention of this in Mr. Huxley's notes. Six pregnancies in seven years must be regarded as a predisposing cause, but I am disposed to have regard to a special personal factor in all cases where there is proclivity to thrombosis, and in this instance phlegmasia alba occurred after the first confinement, which is hardly the rule in this disorder, it being commoner after later pregnancies. I was summoned to see the patient on account of the cerebral symptoms, and founded my diagnosis, which proved to be correct, on a consideration of the general state as well as of the special local symptoms. There was abundant evidence of wide-spread thrombosis as a fundamental condition. The cerebral symptoms were exactly those best recognised as indicating thrombosis of the sinuses and veins of the encephalon. I will now summarize these concisely :—1. Headache, at times very severe, sometimes plainly localised. 2. Vomiting, generally severe. 3. Motor symptoms, indicative generally of irritation, either cortical or central; hence tremors, jerking, spasms, and contractures in certain parts, as of face, eyeballs, and the limbs, usually of one side, ending in paresis or paralysis. One side may show contracture and the other paralysis. 4. Drowsiness, delirium, coma. 5. Variations in the dimensions of the pupils.

Most of these were present in the cases I have recorded above. It is to be noted that hæmorrhages may occur in various parts of the brain as a consequence of the venous obstructions, either large or punctiform—so-called "capillary apoplexies," with softening. In respect of prognosis, once definite cerebral symptoms supervene, the outlook is most grave.

The treatment consists mainly in stimulation and efforts to rouse the circulation. The presence of vomiting renders rectal feeding imperative. Alcohol and ammonia are the chief remedies, and should be freely given. Sodium salts are also indicated to lessen the tendency to hyperinosis. In the treatment of any case of thrombosis it is well to begin with stimulants, and to add to the dietary a good proportion of green vegetable matter. I am of opinion that quinine and ammonia are better drugs to employ at the outset, even in the presence of anæmia, than preparations of iron, which may be used later in the case.

XVIII.—*Case of Trephining for old hemiplegia accompanied by intense headache.* By W. Hale White, M.D., and W. Arbuthnot Lane. *Read February* 14, 1890.

CHARLES GEORGE E., æt. 29, was admitted into Guy's Hospital, September, 1888. He had done no work since he was fifteen years old.

Family history unimportant.

Fourteen years ago he twice in a fortnight fell on the back of his head; after each fall he was insensible. Fourteen days after the second fall, he was admitted into Guy's Hospital under Dr. Pavy, December 4, 1874, for fits. His old report says that fourteen days after the blow he was taken with violent pains in the head; the next morning he was sick, and it was found that he had lost the use of his left side. He was thoroughly examined on admission, but the only noteworthy points were that there was complete paralysis without wasting of the left arm and leg, and slight tonic contraction of the facial muscles on the left side. On December 7 and on December 12 he was sick. He went out January 23, 1875, having gained some power in his arm and leg. He was treated with 3-grain doses of iodide of potassium thrice daily.

He was seen in April, 1875, and then still had loss of power in the left arm and leg. There is no mention of fits in the report.

Since he left the hospital in 1875 he has always been subject to severe headaches and fits. The last fit was eighteen months ago. He has no premonitory symptoms before the fits. All he knows is that he suddenly becomes insensible. He is usually stupid for an hour or so after recovery, and always has a severe headache afterwards. The patient's mother has often seen him in the fits, she has never noticed any twitchings or movements in the left arm or leg before the fit. She says he goes off suddenly, always falling to the left side; the limbs twitch on both sides, but most markedly on the left. The mouth is drawn strongly to the left side, the eyes are open, and turned laterally, but she is not sure in which direction. The fits used to be very numerous, but are much less frequent now. The severe headache is, however, nearly always present.

On admission.—Is a spare man, looks healthy, articulation good. There is no trace of his previous accident to be found on examination of the skull.

Nervous and Muscular Systems.

Measurements: Left arm 7 in., right 8½ in.; left forearm 7 in., right 8 in.; left leg 9 in., right 10¼ in.; left thigh 13 in., right 14¾ in.

The left arm is flexed, pronated when he holds it out. Its muscles are wasted, but they feel firm; the fingers are claw-like, *i. e.* the proximal joints are hyperextended, and the two distal ones flexed. The thumb is adducted. He has some power over the fingers, but his grasp is very weak. He can relax the muscles to a varying degree. The arm requires force to straighten it. The deltoid and serratus magnus and part of the pectoralis major are affected. The trapezius and latissimus are healthy.

The leg is weak and wasted in all its muscles, but not so much as the arm. The back muscles are not affected as far as can be seen. There is no curvature. Face muscles slightly affected, those of the left side being slightly contracted. The right side of the body is normal. The plantar cremasteric and abdominal reflexes all slightly more marked on left than right. No ankle-clonus. Knee-jerks normal both sides. Knee-clonus left side. General sensation and sensations of pain, heat and cold, field of vision, colour fields, hearing, smell, and taste are all normal.

Muscular sense.—With right arm patient can appreciate ½ oz. differences in 3½ oz. loads, or 1 oz. in 7 oz. loads; with the left he could not tell the difference between 0 and 7 oz. He has pretty fair power of directing his left hand to various parts of his body. Temperature in left axilla ·6° F. lower than right. Left 98·2°, right 98·8°.

It appeared quite clear that the injury fourteen years ago had in some way led to the partial destruction of the cortical motor area on the right side, and it seemed extremely probable that there was still some chronic inflammatory thickening of the parts in the neighbourhood, because for thirteen years the patient had been liable to epileptiform seizures, and he complained of severe headache. We came to the conclusion that it would be justifiable to trephine over the motor area to see if we could in any way relieve the headache, and we hoped that possibly also he might, if any thickened tissues were taken away, gain some increased power in the limbs on

the left side. The patient readily consented, for he said that life was not worth having, the headache being so intolerable.

September 30, 1888.—Mr. Arbuthnot Lane trephined over the middle of the fissure of Rolando on the right side. It was found that the disc of bone removed was unusually thick, quite three quarters of an inch. This thick bone was found to extend over all the ascending parietal and ascending frontal convolutions, except just their lower part; it gradually shaded off into bone of the usual thickness. All the thick bone was removed. The dura mater under it was found to be thick, and very white and opaque. Part of this was taken away; the convolutions under it were wasted, and over them there was a collection of cerebro-spinal fluid so constantly seen over wasted convolutions. A few small chips of bone which had been kept warm during the operation were placed back in the wound, which was sewn up and dressed in the usual way. It healed without a single bad symptom.

For three days after the operation the patient had a little headache, and on October 6 he had two fits accompanied by universal twitchings and unconsciousness.

November 19.—He had headache. Otherwise he has had none since the operation. He was discharged December 13.

When he went out the following notes were taken:—Still cannot appreciate differences of weights; there is no increase in size of the muscles; the wound is quite healed, and the skull firm over it; he can perform delicate movements of his hand more accurately. It is difficult for us to appreciate alteration in his walking, but when he went home his friends were certain that he walked better. He has no headache. He is certain that he is is much benefited by the operation, before which the headache was continual.

October 18, 1889.—The patient came to the hospital to-day. His power of walking is much greater than before the operation; he is able to walk a long way in the streets, and is an assistant to an auctioneer. The utility of the hand is very little if at all improved. As will be seen from the following measurements, all the limbs are bigger than they were before the operation:—Left arm $8\frac{7}{8}$ in., right 9 in.; left forearm $8\frac{1}{2}$ in., right $9\frac{5}{8}$ in.; left leg $10\frac{1}{2}$ in., right 12 in. This is probably to be explained by the improvement in his general health, but it is interesting to note that the left side has fully participated in the enlargement. He has had no fits since he left the hospital. We asked him whether he was glad that he had had the operation performed, and he

said he would go through it again to-morrow if his headache came back, he was so pleased with the result; for before, his life had, owing to the headaches, been a continual burden, but since he left the hospital his head had never ached once. The aperture in the skull was filled in by bone.

February 14, 1890, 16½ months after operation.—Patient has had no headache since he left the hospital. He can walk much better, but the arm is not improved. He still expresses himself delighted with the operation.

We may, we think, claim that this operation was successful, for the patient regained power in the leg, and was completely relieved of the headache. The slight headache immediately after the operation and that on November 19 were probably due to some changes going on in the wound, and the same explanation will apply to the two fits which took place shortly after the operation. During the last year he has had neither fits nor headache.

XIX.—*A case of Biliary Fistulæ, with escape of biliary calculi.* By Seymour Taylor, M.D. *Read February* 14, 1890.

W. W., æt. 57, a plasterer, was sent to my out-patient room at the West London Hospital by my colleague Mr. Weiss. The patient was suffering from eczema of the legs; he had, in addition, four sinuses in the belly-wall.

Previous history.—English cholera followed by jaundice twenty years ago. History of attacks resembling biliary colic thirty-three years ago, but the character of the evacuations at this period was not noticed.

The illness causing the fistulæ began about eight years ago with paroxysmal pain in the right hypochondrium. This was followed by redness and continued pain, and subsequently the side "gathered." The "gathering" went on for eighteen months, up to and after his admission to the Temperance Hospital. Five days after admission to this hospital the abscess "burst," and discharged yellow pus. There was no surgical operation for the evacuation of the pus. Two weeks later a very small gall-stone was discharged from a sinus near the umbilicus. Seven more subsequently escaped from other sinuses in the following ten weeks, and an additional ten at least have been discharged in the last six years. The largest, appearing two years after the abscess had burst, was the tenth in number, and escaped from the largest sinus; so that there was a considerable interval between the appearance of the first calculus and the appearance of the largest. The last one to be passed was six months ago, viz. in August, 1889. No tumour or enlargement of the liver or of the gall-bladder was observed prior to the acute illness which reached its climax in suppuration and abscess.

There are now four sinuses, each and all discharging bile-coloured serum, and at times a small biliary calculus. The first sinus and the largest is situated a little above and to the right of the umbilicus, in a line from the umbilicus to the cartilage of the ninth rib. The second sinus is situated just above and internal to the anterior superior spine of the

right ilium; the third about the situation of the right internal abdominal ring; the fourth immediately above the right spine of the pubes.

The motions are of good colour; still, if anything, of lighter tint than normal. The bowels act daily, but he would be constipated without some aperient. The patient prescribes Holloway's pills for himself, but at present he is taking, by my orders, mild doses of cascara sagrada. His urine is not bile-stained, and contains neither albumen nor sugar. He has no vomiting. Occasional rigors occur probably as the result of a travelling gall-stone. But on this point I cannot be sure, since lately no probe or other searching instrument has been passed into any of the sinuses. Some time back, when he attended for one day at St. Mary's Hospital, a sinus was probed, but with no result beyond a rather smart hæmorrhage. Just now he appears in good health, except that he suffers from a trivial attack of eczema.

Remarks.—Many cases of the escape of gall-stones through fistulæ in the abdominal parietes are on record. Murchison, in his classical work on *Diseases of the Liver*, gives references to eighty-six cases, and numerous others have been related by Bristowe and others.*

The present case is interesting as occurring in a man, since it is stated that the great majority of cases, "with few exceptions" indeed, are found in women; and remembering the greater frequency of biliary concretions among women, it is but natural that biliary fistulæ should occur oftener in that sex.

It would seem that gall-stones, when they are discharged through the belly-wall, follow certain tracts, viz. those through which herniæ protrude—the "undefended spaces," as it were, of the abdominal parietes. In the case above recorded the first fistula to appear, and the first to discharge a stone, was the one near the umbilicus, suggesting that the course which the precedent abscess and subsequent sinus took was directed by the round ligament and its suspensory fold of peritoneum. Subsequently fistulæ appeared and discharged gall-stones in the neighbourhood of the right inguinal canal, another weak spot in the abdominal wall. And this multiplicity of openings is one of the remarkable features of the case; in by far the greater number recorded there has been one sinus only. Here the several fistulæ suggest that the many calculi, or fragments of a calculus, ulcerated their way

* *Brit. Med. Journ.*, 1887, p. 284.

through divers openings, since one sinus alone was not sufficient to carry off their number.

Again, the fistulæ probably arising from one seat of ulceration in the gall-passages, whether of bladder or of ducts, would be constant sources of irritation to their fellows, and so prevent healing of the canals. Not that this is a consummation to be desired, seeing that, at present, gall-stones are being discharged, and we do not know how many more may yet remain.

The first fistula had formed and had been discharging a mixture of bile and pus fourteen days prior to the appearance of the first stone, and even then it seemed reluctant to issue, and it was only after four days' probing that it did actually emerge. The escape of a calculus always gives rise to severe pain, paroxysmal in type and attended by rigors, the torture, however, not being so severe as when a gall-stone is discharged by the ductus communis choledochus, but still of a sufficiently agonising character as to render the patient very prostrate at the time.

The discharge now running from the sinuses appears to be a glairy mucus, no doubt from the gall-bladder or gall-ducts, intermixed with a little bile and less pus, as it is of a bright yellow colour, easily staining his linen. It has been tested chemically, and contains bile-pigment.

Bile also passes into the duodenum. Of this there can be no reasonable doubt. His fæces are of fairly good colour, and are not offensive or very costive. But additional evidence is afforded by the fact that the patient is in apparent good health (he is suffering only from a trivial attack of eczema), and he is very well nourished. Further, it is now six and a half years since the first sinus formed, and clinical evidence would lead me to the opinion that the discharge of bile by fistulæ on the surface of the body, with the escape of little or none into the bowel, would be inconsistent with life for so prolonged a period.

As regards treatment, I propose to leave things alone. The patient is not suffering much discomfort from the fistulæ, except at the periods of migration of a calculus.

It has been suggested that the sinuses should be slit up, the remaining calculi thus evacuated, and the ulcerating tracts allowed to heal up, all under antisepsis. Such a procedure has actually been carried out in one or two cases; but others have been recorded in which fatal peritonitis has been set up subsequent on the introduction of a probe even, into the

fistula. And seeing that we cannot tell the thickness of tissue surrounding these outlets, I should not care to take the responsibility of advising an operation which even under the most expert surgical hands might, by accident, open and allow bile to escape into the peritoneal cavity, and set up fatal peritonitis.

XX.—*On two cases of Glandular Tumour of the Tongue.* By Henry T. Butlin. *Read February* 28, 1890.

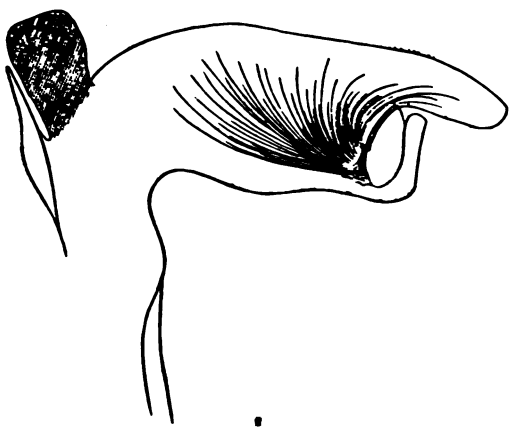
In the section on Adenoma in *Diseases of the Tongue* (London, Cassell and Co., 1885) I gave a short account of all the cases which I could find in medical publications. They were four in number, and I was not able to supplement them by the relation of any case which had occurred under my own observation. I spoke of the disease at that time as "so rare that no general account can be written of it." Now, however, although the rarity of the disease is beyond doubt, I am so fortunate as to be able to give a short account of two cases which have lately been under my care.

Case 1.—E. G., a female, æt. 32, very delicate and liable to attacks of sore throat, was sent to me at St. Bartholomew's Hospital by Dr. Freeman, of Pangbourne, on account of a tumour at the back of the tongue. It was not known how long it had been there, but as there had been continual and increasing discomfort for about a year, we thought that it had probably been growing for that period. The tumour could be easily seen when the tongue was drawn well out of the mouth, and better still when the patient retched. It appeared to be about the size of a hen's egg, was rounded on the surface and smooth, covered with mucous membrane, which was not anywhere broken: it felt tolerably firm, but so elastic that, in the doubt whether it might not contain liquid, I punctured it, with the result of drawing pretty free hæmorrhage for several minutes. As far as could be judged, it occupied the situation of the epiglottis, which could not be seen. Nor could its relation to the larynx be made out on account of its large size. As the patient could speak clearly, and could swallow without much difficulty, it appeared improbable that the intrinsic structures of the larynx were involved. I thought the tumour was probably a sarcoma, growing either from the back of the tongue in the middle line or from the epiglottis, which it appeared to have replaced.

On March 6, 1889, tracheotomy was performed, and Hahn's tube was inserted. When the sponge around the tube had sufficiently swelled out to plug the trachea, two threads were

passed through the tongue, which was drawn as far as possible out of the mouth. The tumour could then be easily reached. I freely incised the membrane covering it and around its base, and then, feeling that the base of the tumour was constricted and that it did not seem to be deeply imbedded in the substance of the tongue, I scooped it out piecemeal with my fingers, until what appeared to be healthy muscular tissue was reached. There was very free hæmorrhage, but it ceased soon after the completion of the operation. The wound was dusted over with iodoform, and the tracheotomy tube was left in until the next day. Recovery took place slowly and with difficulty on account of the weak state of the patient's health. Before she left the hospital, on the 27th of March, I examined with the laryngoscope, and discovered that there were two or three lumps which appeared to be due to imperfect removal of the growth. It was easy at that time to ascertain the exact situation of the tumour, which was at the back of the tongue about half an inch in front of the epiglottis, which was quite natural.

FIG. 3.



I was much astonished when I learned from Mr. Bowlby, who was good enough to examine the structure of the tumour, that it was a cystic tubular adenoma. The presence of cysts had been apparent at the time of the operation, and rather tended to confirm the belief that the disease was a sarcoma.

In June the patient returned to the hospital, when there

was a tumour about the size of a small bantam's egg. She was advised to undergo a larger operation for the purpose of completely removing it, but, perhaps wisely, she refused and returned home.

On the 8th of November I again examined her, and came to the conclusion that the growth was certainly not increased in size; indeed, it was smaller than in the month of June.

Case 2.—A. G., a female, æt. 27, was sent to me at St. Bartholomew's Hospital by Dr. Clegg, of Stockton-on-Tees. For four years she said she had been in the habit of occasionally bringing up some blood, and for the last two years a tumour had been observed at the back of the tongue. It had been lanced by a doctor, and had bled very freely, so that it had to be "tied up." For nine months past there had been a good deal of discomfort in speaking and swallowing. But the tumour had at first caused her so little discomfort that she was not aware of its existence until it was observed by her sister. It occupied precisely the same position as in the former case, and only differed from it in one respect, that it was of rather smaller size. On May 29 it was removed with a large galvano-cautery loop, which was kept in place round its base by means of two curved needles passed deeply beneath it. There was free hæmorrhage for several minutes in spite of the use of the heated wire, but this ceased spontaneously. Tracheotomy was not performed in this case.

Before the patient left the hospital on the 10th of June I examined the base of the tongue, and thought there was still some of the growth remaining, although at the time of the operation the removal appeared to have been complete.

The microscopical examination in this case resulted in the discovery of a structure precisely similar to that of the tumour in the preceding case.

These cases are of considerable clinical and pathological interest.

Four years ago I thought it was useless to "give any rules for the diagnosis and treatment of tumours of this nature," by reason of their extreme rarity, and the impossibility of giving an accurate description of their characters. I am still of opinion that they are very rare, for I can only give an account at the present time of four more cases in addition to the four which were alluded to in my book. Two of them are the cases of which an account has just been given:

for the other two I am indebted to Mr. Bland Sutton, who kindly gave me the references to the works in which they are reported. One occurred in the United States, the other in Germany. Curiously enough, all the eight patients were females, but their ages varied from extreme infancy to thirty-two years. In one instance the tumour formed on the under aspect of the tongue, near the tip (Bryant), and was of small size. In the seven other cases it was situated on the back of the tongue, immediately in front of the epiglottis, almost always in the middle line or nearly so, where it projected in the form of an almost polypoid mass, in more than one case of considerable size.

I would venture to believe that a prominent tumour in this situation, not ulcerated, covered with natural mucous membrane, permitting very free movement of the tongue, and causing comparatively little inconvenience, may certainly be diagnosed as an adenoma. In the case recorded by Dr. Hickman the patient was really suffocated by the tumour, but then it was congenital, and of very large size when the size of the child is taken into account. Death occurred within a few hours of the birth of the infant. In the other cases comparatively little inconvenience was occasioned by the growth, even when it was large. In the cases reported by Bernays and Wolf the tumours were deeply imbedded in the substance of the tongue, and were removed by operations from without. In Bernays' case particularly, there was a decided swelling in the middle line of the neck beneath the root of the tongue, and the bulk of the tumour appears to have lain in the substance of the organ; in Wolf's case the growth lay a little to one side of the middle line, but I cannot find that there was any swelling of the floor of the mouth in any of the other cases, certainly not in either of my own. The bulk of the tumour evidently lay within the mouth, and projected from the surface of the tongue. The operations, consequently, were performed within the mouth, and no external wound was made in the cases in which the tumours were removed. In three of these four cases I know that the tumour was not completely removed, namely, in my own cases and in one reported by Mr. Rushton Parker. I have recorded in the foregoing note the return of the first patient to the hospital, and the finding of a tumour of some considerable size at the seat of the operation. Also, how at her last visit to the hospital a few weeks ago the recurrent growth seemed to be smaller than on the previous occasion.

The further history of the second patient is told in a letter from Dr. Clegg, who was good enough to see her just six months after the operation. He thought there might be a slight increase in the size of the growth, but she suffered the minimum of inconvenience from it.

The success of partial operations is of great importance in dealing with these tumours. It was of the utmost moment to the first of the patients on whom I operated. She was exceedingly delicate, and wholly unfit to undergo a serious operation. On her first return to the hospital I begged my colleagues to see her with me in consultation. They thought, as I then did, that a second operation would be needed, but none of us knew what operation would be most suitable for the removal of a disease, of the nature and origin of which we knew so little. Fortunately the patient herself settled the difficulty by refusing to submit to another operation, and when she came back again several months later an operation appeared to be no longer needed. The course of this case led me to seek the experience of Mr. Rushton Parker with regard to the condition of the tumour in the patient he had treated. He was so kind as to give me a very complete account of the case. The tumour was seated (as in most of the cases) immediately in front of the epiglottis. He bisected it, and removed the two halves with a pair of "punch-forceps." The operation was performed in 1878. In December of that year there was a growth half the size of the original tumour. In April, 1881, it was much smaller. She has never needed another operation, and Mr. Parker enclosed me a letter from her sister, saying that the patient was in good health, and suffered scarcely any inconvenience in connection with her tongue or throat.

Of the pathology of these adenomata of the back of the tongue I shall speak but shortly. Two chief theories may be put forward to account for their occurrence: first, that they are ordinary glandular tumours, developed in connection with the glands behind the circumvallate papillæ; second, that they are of the nature of accessory thyroid glands, developed in connection with the lingual duct which opens at the foramen cæcum. The latter view has been expressed by Professor Bernays of St. Louis College, and by Mr. Bland Sutton, who calls them tubulo-dermoids. It is founded in the first instance on the striking resemblance of the structure of the growths to that of the thyroid gland. The situation of the tumour in the immediate neighbourhood of such fœtal

DESCRIPTION OF PLATE I.

To illustrate Mr. Butlin's cases of Glandular Tumour of the Tongue.

FIG. 1.—General appearance of section of tumour with a ½-inch power. Several of the cell-lined spaces are filled with hyaline or finely granular material.

FIG. 2.—More highly magnified, to show the characters of the cells lining the spaces.

Fig. 1.

Fig. 2.

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structures as might be expected to produce such a tumour, the occurrence of a depression in the summit of the tumour in the case recorded by Bernays, and the formation of cysts in more than one of the tumours, are urged in support of the theory. Formerly I should have regarded these tumours as certainly simple adenomata, for I had never seen one of them, and was not acquainted with any detailed account of their microscopic structure. Now, however, I am disposed to accept the theory of their origin in fœtal structures. No one who has examined sections of one of the tumours can fail to be struck with the resemblance which they bear to the thyroid gland. Their occurrence almost always in the middle line of the back of the tongue, and the fact that one of them was observed in a new-born child are in favour of the theory; and I think that their curious conduct after operation may perhaps be regarded as a proof that they are not of the same kind as other tumours which owe a different origin. The immediate effect of an incomplete operation has been to excite growth, which has been tolerably rapid in one or two of the cases. But the stimulus has only acted for a while; and when it has ceased, the tumour, instead of continuing to in-increase, has actually diminished. Unlike many innocent tumours, fatty, fibrous, and mucous, which display their individual and independent life in a certain measure by the capacity which they appear to possess of continuous and unlimited growth, these tumours seem to be provided only with a limited power of increase. On the stimulus of an operation this power is put forth to the full extent, and would seem to exhaust the tumour so thoroughly that it has been unable to maintain the increased bulk, and has therefore in the course of time dwindled down one half, and sunk into a life of insignificance and lethargy.

XXI.—*Case of Cheyne-Stokes' Breathing of three months' duration in the course of granular kidney.* By SAMUEL WEST, M.D. *Read February* 28, 1890.

WILLIAM H., æt. 55, was admitted into the Royal Free Hospital on October 1, 1887, suffering from dyspnœa. With the exception of gout, from which he had suffered for thirty-four years occasionally, he had enjoyed good health up to eighteen months ago, when he noticed that his breath began to get short on exertion. He had been a teetotaller for many years, and for the last five years had been free from gout. Six months ago he was attacked during one night with severe dyspnœa; the attack came on quite suddenly and without cause, waking him up, and lasted about half an hour. He was obliged to sit up in bed and grasp something to get his breath, and he felt as if he were going to die. He had altogether three attacks, but in the interval between them he felt quite well. The attacks came on, he observed, after business worries. He had never suffered pain in the chest, but had had pain of an aching character in the loins for some years. After each attack he passed a large quantity of urine. Towards the end of April he had his worst attack, and had been free since then until three weeks ago, when a very severe attack seized him, from which he never completely rallied, the breathing continuing short, especially on exertion, so that he has been unable to walk even a short distance, but he has never kept his bed.

The patient was a well-developed man, but his muscles felt flabby, and his complexion was sallow and earthy.

The radial and temporal arteries were tortuous and thickened, and the tension high; pulse 104, regular; the respirations 48, shallow, chiefly diaphragmatic, and expiration prolonged.

The heart's apex was in its normal place, and the cardiac dulness was not increased. The sounds were normal, except that the second was accentuated at the apex.

The urine contained some albumen, about $\frac{1}{16}$, and had a sp. gr. of 1010.

During an attack he prefers to sit upright in a chair, but at other times lies most comfortably on the back.

The attacks were regarded as cardiac in origin, the heart being probably fatty, and the cause of the heart affection was thought to be granular kidney. The retinæ were healthy.

The patient was ordered three minims of tincture of strophanthus and five minims of tincture of nux vomica, with calumba and soda mixture every five hours; he was also ordered brandy.

October 4.—The patient had had but little sleep. Had been restless and wandering, talking incoherently at times, and wishing to get up, under the impression that he was at his business. The pulse slower, but of very high tension. The respirations 30, but not so shallow. The eyes have a staring and wondering look, and he takes some time to comprehend what is said to him.

October 5.—The breathing had been bad the whole night, and though there had been no actual attack of dyspnœa, still the breath was short enough to keep him awake, and he had hardly slept at all. This morning there was well-marked Cheyne-Stokes' breathing. The respirations were about 48 in the minute; the cycles consisted of 30 to 35 respirations, and then a pause lasting about twenty seconds. During the pause the pulse did not change in character or rate; nor was there any alteration in the pupils or in the colour or appearance of the patient, who seemed quite unconscious that anything unusual was occurring.

October 8.—Patient has been in the same condition; he seems never to sleep though constantly drowsy, but dozes for a few minutes at a time night and day. Last night he fell asleep for about ten minutes, and then woke up in a fright with his hands and face bathed in a cold clammy sweat.

The urine was examined again, and contained some granular casts. The area of cardiac dulness was slightly increased upwards und to the left. Five minims of tincture of digitalis was substituted for the strophanthus.

On October 10 a small dose of morphia was given *sub cutem,* and he slept all night. He was sick several times the next morning, but the Cheyne-Stokes' breathing was not so marked.

On the 13th a murmur was detected, it was thought at the right base, systolic, but not conducted into the carotids.

On the 17th the pauses in the respiration were absent, and remained absent for a week.

On the 24th the respirations were 40 but easy, and though there was no distinct Cheyne-Stokes' breathing, still there were every now and then intermissions, from two to four respirations being missed. The pulse continued of very high tension, and was at times slightly irregular. The heart, which had been slowly dilating, now presented its apex in the sixth space, an inch and a half outside the nipple, and the dulness reached above the fourth rib. At the apex, and limited to it, there was a short harsh systolic murmur; the base sounds were feeble, and the accentuation of the second aortic sound had disappeared. The patient, however, said he felt better.

On the 25th the apex murmur was heard in the mid-axilla.

On October 31st the heart was in much the same condition, but at the right base the first sound was weak and the second somewhat ringing, and neither the systolic nor the diastolic interval was quite clear, though there was no distinct murmur. The short pauses previously described, or rather intermissions of three or four respirations, continued. The pulse remained of the same high tension.

On November 2nd well-marked Cheyne-Stokes' breathing returned after having been absent from October 17th.

The next day the pauses were absent, but the well-marked crescendo and diminuendo in the respiration continued. The day following these too were gone, but every now and then the patient took a deep sighing inspiration. When asleep the pauses returned, and lasted about eighteen seconds; but on the next day again this was reversed, the pauses being absent when the patient was asleep, and present only when he was awake.

On the 7th the Cheyne-Stokes' breathing returned.

On the 9th the patient insisted upon going out to transact some necessary business, much against my advice, and in the evening was very ill with continuous dyspnœa, which culminated during the night in three very severe paroxysms, for which the house physician was summoned. By means of ether and brandy the attacks were relieved. From this time the Cheyne-Stokes' breathing continued until the patient's death, the pauses lasting on the average about twenty seconds, and the whole recurring about once a minute, the number of respirations being about forty in the minute.

On the 16th the patient was very restless and semi-delirious, the face greyish livid. The cycle of respiration lasted about a minute, the pause occupying about sixteen to eighteen seconds of this period, and the total number of

respirations were about 40; the pulse about 100, not quite regular, and with a feeble wave, but the tension was still above normal. No variation could be detected in the pulse or pupil in the two phases of respiration.

The cardiac dulness was much as before, but the apex murmur could be heard, it was thought, faintly behind and at the right base; both sounds were ringing, and there was a doubtful systolic murmur.

The patient was extremely drowsy, and had to be roused to take food, which he ate with relish, but he fell asleep again at once.

When the patient was told to breathe during one of the pauses, he would make an attempt, but with hardly any effect, for the diaphragm did not respond, nor the ordinary muscles of respiration; but all that the patient could do was to set some of the extra respiratory muscles to work. The contrast between the voluntary attempts at respiration during the pause and the involuntary respirations after it, was very remarkable. It had been observed lately that the pause was generally terminated by a short cough, of which the patient did not seem to be conscious.

November 26.—The patient had been getting gradually worse for the last few days. Last night he was so restless that a little opium was given him, after which he slept for about two hours. It did not seem to suit him, for on awaking he was delirious and not so well. The hands were found to be a little swollen to-day for the first time, but the feet were not.

The pauses lasted on the average thirty seconds, sometimes longer. During them the patient seemed semi-conscious, the eyes were partly closed, the mouth wide open, and the saliva dribbling from it. The pulse seemed to gain force and volume towards the end of the pause, and to decrease again when the respirations recommenced. Cough marked the end of the pause, and was more marked when the patient was lying back. The urine was passed unconsciously, and though the patient answered when spoken to, he did not seem able to express his wishes. For a little more than a week from this date the patient developed a ravenous, almost insatiable appetite.

On December 12th the right eye was examined to see if any change in the calibre of the vessels or in the circulation could be detected during the phases, but nothing was observed.

Nothing further transpired until the patient's death,

except that the pauses became slightly longer and the arterial tension lower. As the tension fell it was observed that the pulse became fuller and stronger at the end of the pause.

The patient died quietly on December 27th, having passed no urine for the last eighteen hours of life. A few hours before death he vomited a quantity of blood-stained fluid without effort or distress.

To our great regret we entirely failed to persuade the friends to allow a post-mortem examination, so that the exact nature of the lesions must remain uncertain; but I think there can be little doubt that the case was one of gradual failure of a hypertrophied heart in the course of granular kidney. The case presents several points of interest.

In the first place it is interesting to note the changes in the respirations which occurred while the patient was under observation. Well-marked Cheyne-Stokes' breathing was present for seventeen days after admission, and then disappeared for a fortnight, to last on its return till the patient's death, eight weeks later. The pauses varied from eighteen to thirty-five seconds; they were longest just before death. At one time the waves of respiration were distinct, though the pauses were absent. At another time during the fortnight's interval the respirations were regular in force and time, but there were every now and then intermissions, from two to five respirations being missed. At another time the place of the intermissions was taken by a long, deep, sighing inspiration. In this case there can be little doubt that these were all but different stages of the same condition. Even during the longest pauses, except just at the last, there was no observable change in the pulse, pupil, or appearance, no cyanosis developed, and the patient seemed quite unconscious that he was not breathing; indeed, he appeared to have lost for the time all voluntary control over his respiration.

The condition of the pulse is next worthy of notice. The tension was remarkably high; this is common in Cheyne-Stokes' breathing, but it has in this case, I imagine, little to do with it, and depends on the granular kidney. The pulse-rate was slow, never rising above 90, and it stands in marked contrast to the persistent rapidity of the respirations, which were on the average 40. This is, however, by no means rare in weak hearts, though on the whole, perhaps, the reverse is more common, viz. a rapid pulse-rate and not accelerated respirations.

The subnormal temperature is also remarkable, though

this also is probably to be connected with the condition of the heart and the feeble circulation dependent on it. The vomiting, I think, was also cardiac in origin.

If we are to connect Cheyne-Stokes' breathing in any way with the pneumogastric nerve, it is interesting to make note of the ravenous, insatiable appetite from which the patient suffered for a week towards the end.

The most important feature in the case is, however, the length of time that the Cheyne-Stokes' breathing lasted. It was well marked for seventeen days after admission, and though absent as such for the next fortnight, still there were irregularities which were clearly of the same character, after which it returned and lasted till death, eight weeks later. So that from admission till death a period of three months or nearly thirteen weeks elapsed. I do not know of any case of longer duration recorded.

Addendum.—Since writing this paper, and as the result of the discussion which took place upon it, several interesting communications have appeared in the *Lancet* during the months of March and April, in which a few instances of recovery after Cheyne-Stokes' breathing are recorded, and a few of long duration. The most remarkable was that described by H. S. (*Lancet*, March 27, 1890), of a gentleman aged 92 years, who had presented the phenomenon in a slight degree for many years.

XXII.—*Case of Diabetic Coma treated by saline injections.* By W. H. Dickinson, M.D. *Read February* 28, 1890.

ISABEL D., æt. 25, married, came under my care at St. George's Hospital suffering from diabetes, of which she had had symptoms, thirst and loss of flesh, for two years. Her mother and a sister were said to have died with this disease.

When admitted, July 10, 1889, the patient was lean and sharp-featured; she had a red, dry tongue, and a strong smell in the breath of the kind which is likened to that of acetone, while perchloride of iron gave a marked acetone reaction in the urine. The urine on admission, under unrestricted diet, amounted to 7000 grammes in twenty-four hours, had a specific gravity of 1035, and contained, according to the observations of my clinical clerk, 700 grammes of sugar and 63 of urea. The diet was now regulated in the manner usual with diabetes, ordinary bread being replaced by gluten bread, sugar and starchy matters withdrawn, and soda-water given freely.

On the 15th, about 7 A.M., it was found that the patient could answer questions only in an indistinct manner, and was becoming unconscious. This event had been anticipated, and a saline solution prepared, such as is used in cholera, containing to a pint of water 50 grains of chloride of sodium, 3 of chloride of potassium, 25 of sulphate of soda, 25 of bicarbonate of soda, and 2 of phosphate of soda. I was sent for by previous agreement, and reached the hospital at 8.45. She was then in a condition like profound sleep, from which she could be roused for a moment, but not so as to answer intelligently, at once relapsing into insensibility. The respiration was deep and exaggerated, the acetone smell strong; the pulse normally full, 128.

The solution, at a temperature of 100°, was now injected by the house surgeon, Mr. Le Cronier, into the median basilic vein of the right arm until the stock in hand was exhausted. More was made without delay, but in the interval coagulation had taken place about the incision, so that the process had to be continued in the same vein of the left arm,

a total of 106 oz. being introduced into the two veins in the course of an hour and a half. An ordinary glass syringe was employed.

The patient showed no sign of consciousness by movement or otherwise during the operation while the incision was being made, or subsequently.

Under the operation the pulse remained unaltered, as also did the aspect of the patient. There was no such alteration, either for better or worse, as to attract notice, and the process was discontinued when the liquid was exhausted, because no encouragement to continue it was discovered. I left the hospital, having witnessed what I supposed to be an unsuccessful attempt to relieve a hopeless condition. On my return at 1.30 I learned with surprise that scarcely had I turned my back on the patient than she recovered consciousness. Ten minutes after the operation was concluded she turned about in bed, opened her eyes, and sat half up, uttered complaints of restlessness and of cramps in the fingers, recognised her husband and child, conversed sensibly with them, and took liquid food in a natural manner. This restoration to consciousness remained complete for twenty-five minutes, when there was a return of somnolency, which, however, was neither profound nor persistent.

When I saw her at 1.30 in the afternoon she was awake and sensible, though occasionally relapsing into drowsiness; the breathing was without the former exaggeration, and now quiet and normal. The pulse was small, 135 in the minute. The bowels acted, and she passed water voluntarily; 660 c.c. which were collected had a specific gravity of 1010, and contained 1·7 per cent. of sugar and some albumen.

By way of keeping up the hydration, soda water was ordered to be given freely by the mouth; for a time the patient took it without objection, even helping herself to it, but after two and a half pints she refused more.

At about 12.30 P.M. on the 16th she relapsed into semi-coma, but not so profoundly but that she could take liquid food, which was administered freely throughout the night. At 11.30 A.M., the coma continuing and increasing, it was determined to repeat the injection. The veins of the arms being no longer available, I sought the aid of my colleague Mr. Turner, who cut down upon the right internal saphena in the thigh and inserted the cannula. Chloroform was required in consequence of the unconscious struggles of the patient. A tube and funnel were connected with the cannula,

and saline fluid, identical with that before used, was allowed to flow into the vein with a fall of five feet six inches.

Under the operation the aspect of the patient rapidly improved, the face became less thin, and the complexion acquired more of the pinkish hue of health than it had had before. As it went on many of the veins over the surface, which before could not be seen, became visible and full; the face then assumed a somewhat congested look, the ears being bluish. The breathing remained normal; the pulse gained in volume. When the venous fulness became marked the operation was discontinued. We had watched anxiously for some indications to stop, but saw none before this.

The encouragement afforded by the previous injection appeared to warrant perseverance up to this point. I had hoped to have seen consciousness restored under the process, but was as yet disappointed; perhaps the chloroform, though but little had been given, interfered. The fluid, passing in with great readiness, first with no visible results, and next with apparent benefit, was allowed to flow for twenty-five minutes before the increasing congestion warned us to stop. It was now found that no less than 350 oz., or seventeen and a half imperial pints had been thus introduced into the circulation. I had ordered 200 oz. to be prepared and kept in readiness; the dispenser, with a view to further demands, made double this quantity; measurement of what was left showed that the amount stated had gone into the veins.

With such a conclusion special care was taken to avoid error; but there was practically no waste or spilth, and the figures given may be taken as presenting this fact.

After the operation the patient vomited once or twice, possibly from the chloroform. The breathing was for a time laboured, and she remained unconscious for about three quarters of an hour, after which she recovered complete consciousness, and retained it until the evening.

During the four hours following the operation 704 c.c. of urine were collected, nearly or quite all she had passed, which, according to my clerk, Mr. M'Grath, had a specific gravity of 1012, and contained 1·8 per cent. of sugar, ·13 per cent. of urea, and a small quantity of albumen.

At 9.30 she was drowsy but able to answer questions. The turgescence of the veins, according to the report of Mr. Ogle, the house physician, had now ceased. The respiration was thirty-two in the minute, expiration rather long but not laboured, pulse small and feeble, 140. Urine had been

passed but not profusely. There was a trace of œdema over the tibiæ which was not there before. During the night she was conscious but restless. The bowels acted loosely but not extravagantly. Liquid food was taken. At 9.45 on the following morning (the 17th) she became less conscious, but was still partially so when I saw her at 2 P.M. The face was then somewhat congested and the lips a little blue, though there was no general venous turgidity. The face was fuller than formerly, and the limbs were less attenuated. The skin was not dry as before, but normal in texture; there was no obvious perspiration, nor had there been anything which could be called sweating. The œdema continued about the ankles and tibiæ. The heart's sounds were feeble; there was no murmur either in the heart or great vessels. The lungs for the most part were amply resonant, though over their lower portions, more particularly on the left side, a little dulness and tubular breathing were detected. Respiration 34, pulse 136. The acetone smell was much less than before, but could still be distinguished in the breath. The urine no longer gave the acetone reaction with perchloride of iron. At 4 P.M. the patient ceased to be able to swallow, though sufficiently conscious to be aware of the difficulty, saying "I can't" when food was presented. At 8 P.M. she was quite unconscious, and so remained until she quietly expired at 4 o'clock on the following morning. At 10 o'clock Mr. Ogle had found the pulse strong, and concluded that death was threatened rather by coma than cardiac failure.

Between 9 o'clock on the morning of the 15th, and 5 o'clock on the afternoon of the 16th, a space of thirty-two hours, no less than 456 oz. (more than twenty-two imperial pints) had been introduced into the veins. It was, therefore, of interest to ascertain what alteration in weight the body had undergone under the process. The patient had been weighed on July the 11th; the body-weight was then 5 st. 11½ lbs. Nine and a half hours after death the body was found to weigh 6 st. 9 lbs., a gain of 11½ lbs., which could be attributed only to the injections.

The post-mortem examination was made thirty-four hours after death by Dr. Veale in my presence.

The superficial veins, especially over the shoulders, neck, and thighs, were deeply blood coloured, as also were those over both arms. The general blood-staining was more than is usually observed when the blood is fluid and in hot weather.

There was a trace of œdema on the ankles, less than during life, none elsewhere. The large serous cavities were examined for effusion, which was completely extracted with a syringe and measured; the peritoneum yielded 18 oz. of straw-coloured fluid, the pericardium 1 oz. of blood-tinged fluid, the pleuræ together 12 oz. blood tinged.

The aorta, cavities and valves of the heart were blood-stained. The walls of the heart were thin, and both ventricles flabby and uncontracted. In the right ventricle was a shred of partly decolorised fibrine, about three inches long and as thick as a cedar pencil; the left was empty. The valves were natural. The heart weighed 7 oz. From the state of the heart it was inferred that asthenia had taken part in the act of death.

The lower lobes of both lungs were heavy to the touch; portions sank in water. They were nearly, but not quite, devoid of air. They were loaded with blood, and presented points of extravasation on their surfaces. The condition was more akin to cardiac congestion than pneumonia.

The stomach and intestines were distended with gas, but not otherwise abnormal.

The liver weighed 4 lbs. 6 oz. The acini were distinctly marked, rather pale; the intermediate structure somewhat congested. The general aspect was paler than normal; the impression conveyed was one of fattiness together with congestion.

The spleen weighed 8 oz.; it was firm, dark, and full of blood.

The kidneys were full of blood and blood stained; the capsules were adherent, the cortices were increased in bulk and buff in colour as in early nephritis, the cones were red. The two were about equal in size, the joint weight 14 oz.

On exposing the surface of the brain a state of great congestion was conspicuous; the veins in the sulci were loaded with blood, the pia mater being injected arterially. The grey substance was dark, the bloody puncta of the white matter were numerous. There was no observable amount of fluid in the arachnoid, but the ventricles contained about half an ounce which was blood coloured.

With regard to this post-mortem, what was at once striking was the venous congestion presented by all the organs, but to the greatest extent by the lower lobes of the lungs and the brain; the extravagant engorgement of the veins between the convolutions was remarkable. The blood

was generally fluid, and in the heart was of a redder tint, besmearing the tissues more tenaciously than natural. It is probable that the general appearance of congestion was increased by, though not chiefly due to, the fluidity of the blood. No watery liquid issued from any of the vessels, with the exception of a small quantity from the right saphena vein when the dressing was removed.

The hopelessness of diabetic coma under any ordinary treatment may be held to justify, or at least to excuse, treatment which is exceptional. This condition has before been treated by injection into the veins, though never so liberally administered. It is in this respect chiefly that I thought the case worth the notice of the Society, to which I present it rather as an instructive experience than as an example to be in all respects followed.

The first injection of 106 oz. appeared to be wholly beneficial; the result suggested only a wish that it had been more. As to the second, the amount was more than had been designed, or, indeed, was known until afterwards; 200 oz. had been thought of as the limit of possibility. The encouragement to exceed this came from the readiness and absence of discomfort with which the fluid was taken in, the improvement of aspect under it, and the absence of ill result until the increase of circulation passed into venous congestion, which was accepted as a warning to stop. I had gone on with the more perseverance because I hoped to bring about the restoration of consciousness under the operation, and to have found it more lasting than on the former occasion. The restoration occurred as before—not during the process, but after it. The delay suggests that the beneficial result was due not so much to the restoration of the water, which must have been immediate, as to elimination, chiefly by diuresis, which must have been gradual. It will have been noticed that water of low specific gravity was passed abundantly during and after both operations, though it was not practicable completely to measure it. The recurrence of the coma after its temporary removal in each instance, more particularly in the second, notwithstanding that the injection was profuse beyond what, with the experience of this case, would be right to practice in another, gives us but little encouragement to expect more than temporary good from the operation. The occurrence of œdema, and, as the post-mortem showed, of deeper effusions was sufficient to indicate that an abnormal condition had been established in the contents of the vessels, or in their degree of fulness or

both. The admixture with blood, considerable in some places, more particularly in the ventricles, may be held to show that increased pressure took a leading part in the process. I examined the several exudations, as obtained after death, with the result which somewhat surprised me, that they were not especially aqueous, but fully up to the average of dropsical effusions in solid matter and albumen. From the ventricles and pericardium it was not possible to obtain enough fluid for complete examination; in both it was abundantly albuminous: the former contained 2·91 per cent. of solid matter, the latter 5·02 per cent. of solid matter, both for their situations rich in solids. The fluid from the pleuræ had a sp. gr. of 1016·7, and contained 4·77 of solid matter and 2·10 of albumen; the fluid from the peritoneum had a sp. gr. of 1013·5, and contained 3·49 of solid matter and 1·38 of albumen; so that these effusions also were quite up to the average of dropsical exudations in solids and albumen.

The practical deductions which spring from this case are these—the injection of saline liquid in diabetic coma may be attended with benefit, though this benefit may be temporary; 100 oz. can be introduced certainly with impunity, and probably twice as much. The beneficial effect is not immediate, but requires time for its production. Hence the operation should be conducted more slowly than in this instance. The urgency of diabetic coma does not allow of unlimited protraction, but it may be suggested that some such rate as three pints in the first hour and two pints an hour afterwards would give time for secretion and not overstrain the vessels. At this rate eleven pints would be introduced in five hours, and the experiment, if not absolutely successful, would be an improvement on that which has been recorded.

Taking the benefit from the introduction of aqueous fluid to be distinct, however temporary, it is suggested, as a practical and safe conclusion, that the free use of drinking water should be enforced, before diabetic coma is established, in cases where it is anticipated.

XXIII—*A case of Acute Universal Desquamative Dermatitis, possibly caused by chloralamide.* By P. H. Pye-Smith, M.D., F.R.S. *Read February* 28, 1890.

THE following case appears to be worthy of record, partly as an example of a form of dermatitis which is still obscure in its origin and pathological relations, partly as a probable result of a newly introduced remedy, and another example of the important group of eruptions produced by drugs.

A. S., æt. 40, a brewer's cellarman, had been before in Guy's Hospital under the care of my colleague, Dr. Frederick Taylor, with symptoms of aortic valvular disease and of aneurysm. He was readmitted under my care on November 29, 1889, about three months after his discharge.

I found him in much distress from insomnia, dyspnœa, and palpitation, with occasional paroxysms of pain. He was ordered iodide of potassium in 5-grain doses, afterwards increased to 15, three times a day, but this drug caused so much cardiac depression that it was omitted on December 7th, so that he only took 15 grains on each of two days, and 45 grains on the third day. Laudanum and compound spirits of ether failed to procure him rest at night, and sulphonal was not more successful. He was then ordered chloralamide, 2 scruples every evening. This was taken with decided benefit at first, though it was sometimes needful to repeat it after midnight. After failure of other hypnotics it was resumed, so that he took either 40 or 80 grains every night, with one exception, from December 1st to 13th.

On December 13th his eyes were red and watered. Twelve hours later a rash appeared on the face, neck, and chest, and rapidly spread over the arms, abdomen, and legs. His appearance on the 14th was not unlike that of a case of measles; the face covered with an erythematous eruption, the eyes and nose running, with a furred tongue, quick pulse, and raised temperature, the urine scanty and high coloured, with a trace of albumen and deposit of lithates; but the colour of the eruption was bright red, not blotched, and it was a diffused hyperæmia of the skin without papules (see Plates II, III). In the tint and uniformity of the redness, as well as in the subse-

quent desquamation, the rash was not unlike that of scarlet fever; but its distribution (as well as its course) was different, for it began on the face, and was at least as much marked there as on the trunk and limbs. The whole of the surface was covered, including the scalp, the hands and feet, and the genitals. The mucous membrane of the mouth was red, swollen, and inflamed, but there was no special angina, the lips, gums, and tongue being the parts most affected; nor was there swelling of the lymph-glands at the angle of the jaw or in the neck.

The temperature, which had been normal on the morning of December 11th, rose slightly that evening, and on the 12th, the day when he first complained of watering of the eyes, was a little over 100°. It subsided towards night, and on the 13th and 14th fluctuated between 100° and 102°. It was 102·4° on the 15th, somewhat higher on the 16th, and on the 17th reached its highest point of 103°. It fell to normal on the 19th, and rose again next day. It was normal on the 21st, but rose the following day, and on the 24th again reached 103°. On the 25th it fell to 99°, and there was no subsequent pyrexia of importance.

The rash preserved throughout the character of uniform diffused and superficial dermatitis, as above described. There was no hæmorrhage, and the only further progress noted was in the formation of a few small vesicles upon the arms. He complained of the soreness of the mouth, and was restless at night from the absence of his chloralamide draught, which no other sedatives seemed to make up for. But the rash occasioned no pain, and little or no irritation. By December 18th (the fifth or sixth day of the eruption) it was beginning to fade, first upon the legs, and afterwards on the abdomen, chest, and arms. The back continued red some days longer, and a few vesicles appeared there as well as on the abdomen before it disappeared. The rash on the face had nearly disappeared by the 20th, but the eyes were still inflamed, itching and shooting pain being constantly present. It was a catarrhal ophthalmia without photophobia, and with no inflammation of the iris or sclerotic. On the face and limbs particularly, but more or less over the whole body, there was profuse desquamation. By the 21st the pulse had fallen with the subsidence of the temperature, and the urine was no longer febrile, while a trace of albumen which had been present disappeared.

On the 23rd desquamation was going on rapidly. The

flakes were large, thin, and flat, in some places peeling off as after scarlet fever, in others more resembling the peculiar squames of pityriasis rubra. In fact, if the patient had been seen for the first time at this period of the eruption, his case would probably have been regarded as one of exfoliative dermatitis. By December 26th the desquamation was nearly over, and the skin had resumed much of its natural appearance, but some amount of branny desquamation continued for a week longer. There was little pigmentation left, and that soon disappeared, as we expected from the acuteness of the eruption.

Acute attacks of dermatitis, running a rapid course and accompanied with fever, were formerly generally put down as acute eczema, but this name ought certainly not to be applied to cases like the present. They are common, acute, superficial dermatitis: *acute* in course and symptoms, and *common* in character, *i. e.* like the inflammation produced by common irritants, and therefore capable of irritation at will. It is easy to produce an artificial eczema, but we cannot imitate psoriasis or pemphigus. They are *superficial*, not destroying the papillæ, and therefore disappear without leaving scars. But they show no trace of the characteristic distribution of eczema; they are not recurrent, and they do not produce the characteristic weeping surface of true eczema; nor is the desquamation which follows the eruption like the branny, scanty, furfuraceous scales with thickening and infiltration of the skin, which mark the final and also the quiescent stage of eczema. In many respects cases like the present approach much more closely to certain forms of Duvergie's pityriasis rubra or Erasmus Wilson's exfoliative dermatitis. They begin, however, more acutely, and they pass off much more easily; though the form of desquamation is similar, it is far less profuse and protracted; and they do not become chronic.

Resemblance to an exanthem, particularly to scarlatina, measles, and rubeola, is obvious, but the points of diagnosis from each are sufficient, apart from the question of contagion.

A much closer relationship of the present case is that to the acute papular or diffused forms of dermatitis which, not infrequently, are seen in the progress of chronic Bright's disease. They sometimes resemble lichen, sometimes eczema, but are usually dry, rapid in their evolution, and quite distinct from the occasional erythema of dropsical limbs. In fact, the cases I have observed have always been in the more chronic cases of Bright's disease, in which there is but little

œdema. Their prognostic significance is grave, for they often come on towards the end of the patient's life, together with well-marked symptoms of uræmia. This is not, however, always the case, and I have more than once seen such an eruption in an elderly patient pass off, and the renal affection afterwards improve. The presence of albuminuria in the present case has no special significance, for it existed before the rash or pyrexia began, and was no doubt due to congestion from the cardiac disease.

Eruptions due to drugs are as a rule erythematous in character. Those, for instance, produced by belladonna and copaiba are scarlatiniform or morbilliform, or resemble the erythema and urticaria which are produced by certain articles of food. I am not aware that any rash has yet been observed to occur in a patient who is taking chloralamide; but that chloral hydrate sometimes produces an eruption is well known. Some of the recorded cases were not dissimilar from the present one, but none so severe. Fatal cases have generally been purpuric. In the present instance the exhibition of the drug and the appearance of the rash may have been accidentally coincident, but inasmuch as similar acute forms of universal dermatitis are generally associated with the toxic effects of drugs or of certain kinds of food, it seems probable that the chloralamide was the cause of the eruption. If this new drug (which otherwise appears to be a useful and harmless hypnotic) should become popular, this hypothesis will soon be contradicted or confirmed by further experience of its action.

DESCRIPTION OF PLATE II.

To illustrate Dr. Pye-Smith's Case of Acute Dermatitis.

The uniform punctate character is shown, and the bright crimson colour of the rash, taken at its height of development.

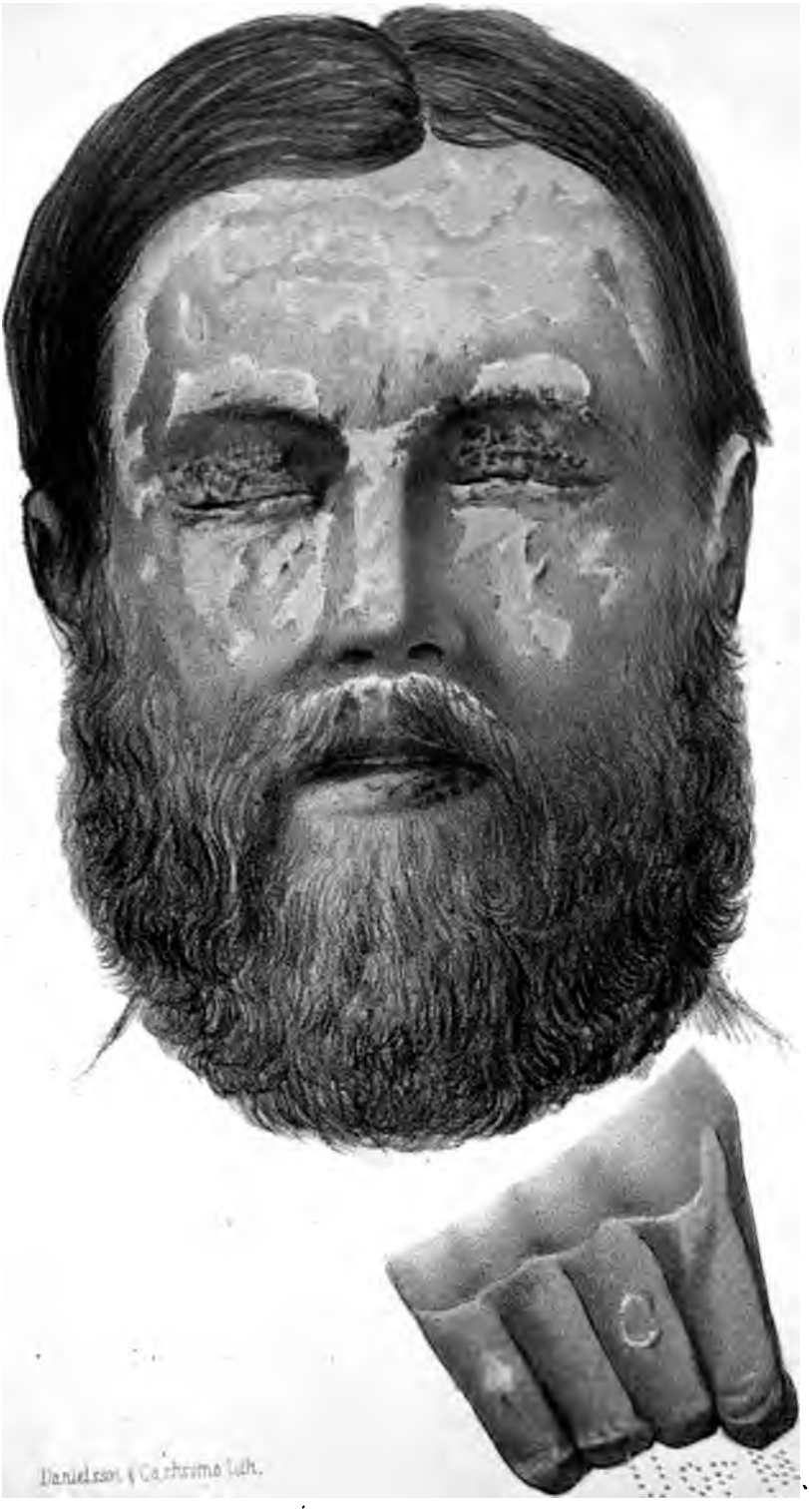
Davidson & Co. chromo lith.

DESCRIPTION OF PLATE III.

To illustrate Dr. Pye-Smith's Case of Acute Dermatitis.

The desquamating stage, taken a few days later. The colour is less vivid, and pigmentation is beginning.

The lower figure in this plate shows the fingers of the right hand with a continuous mass of desquamating cuticle.


Daniel.son & Cathrine lith.

XXIV.—*Case of Rupture of the Small Intestine without external wound: peritonitis: abdominal section: excision of ruptured gut: enteroraphy: recovery: table of cases previously recorded.* By JOHN CROFT. *Read March* 14, 1890.

IN May of 1888 I communicated to the Society the particulars of a case of ruptured small intestine without external wound. See the *Transactions* for 1888, p. 254. The lesion had happened to an adult who was operated on by me eighteen and a half hours after the infliction of the injury. For reasons that I explained at the time, I preferred to make an artificial anus preparatory to a more radical cure. The man made as good a recovery as it was possible for him to make under the circumstances. At the end of a month a resection of the artificial anus was made, but owing to the combined effects of the first lesion and the long second operation he failed to recover, and died thirteen hours afterwards from congestion of the lungs and exhaustion. A complete cure had been nearly obtained.

Since then a complete success has been vouchsafed us, as the narrative of the following case will show.

Charles A., æt. 14, admitted into St. Thomas's Hospital, under Mr. Croft's care, on May 21, 1889, at 10.30 P.M.

The boy had been kicked in the abdomen by a horse about half-past seven in the evening. He fell when struck and became "unconscious," and was carried to his home in the same street and put to bed. He had taken his tea at half-past four, and he passed water about that time. As he was in pain, his friends gave him some "senna" to act on the bowels. This he fortunately vomited. As his pains increased he was brought to the hospital. On the way there he vomited twice, and in the waiting-room he brought up a little light-coloured fluid which was said to be streaked with blood. A catheter was passed in the admission room, and about eight ounces of normal urine were drawn off. When admitted it was not thought that he was suffering from shock. It was observed, however, by the nurse that he doubled up his knees and laid himself on his side. He had been kicked

below the umbilicus, and the lower part of the belly was tender to the touch. Ice was applied to the abdomen. Morphia was administered hypodermically. Fluids and solids by the mouth were forbidden. The temperature taken after admission was 99·2°, and his pulse was steady at 80. During the night the temperature rose to 103·6°.

On the following morning, May 22, at 9.45, Mr. Croft was called to see the boy, and found his expression anxious, the lips dry, temp. 103°, pulse quick, and tongue furred. The legs were drawn up, the abdominal wall flat, rigid, and very tender. The muscular resistance was very marked. The pain was chiefly below the umbilicus. There was slight dulness in the left loin, none in the right, and none over the bladder. He had not been sick since he had come into the ward, and he had not been delirious.

The diagnosis was in favour of ruptured intestine and acute peritonitis. Exploration of the abdomen by median laparotomy was immediately determined upon and carried out.

The patient was kept under ether, the operation lasting an hour and three quarters. Mr. H. B. Robinson rendered very valuable assistance.

On dividing the linea alba, an œdematous condition of the subperitoneal tissue was observed. As soon as the peritoneal cavity was opened a faint fæcal odour was observed. When the omentum was drawn aside about an ounce and a half of turbid dirty-brown fluid escaped with a distinctly fæcal odour; its under surface was adherent to some coils of intestine, and was coated with exudation and the same dirty-brown fluid. The coils of bowel were matted together and more or less stained. On breaking through these adhesions and separating the coils on the right side about two inches below the umbilicus, the region of chief injury became more evident. A small rupture was found on the under surface of the ileum, measuring about three eighths of an inch in diameter. This lesion was in the centre of a small areola of ecchymosed and inflamed tissue. On the opposite wall of the gut there was another ecchymosed spot, corresponding with the first lesion. After cleansing and examining this portion of the bowel Mr. Croft determined to resect it, as he deemed it unsafe to return the contused as well as the ruptured pieces.

Makins' forceps were applied below the spot at which the incision was to be made, and Mr. Robinson took charge of the upper portion. A V- shaped segment of the gut was cut out with scissors and snipped from its mesenteric attachment.

Immediately after excision the mesenteric wound appeared to be not more than three eighths of an inch in width.

When bleeding had been arrested the mesenteric wound was carefully closed from side to side by eight sutures, passed after Lembert's manner, four above and four below. The cut ends of the intestine were next carefully adjusted, and opposite the attachment of the mesentery sutures were passed, so as to draw together the muscular coats, applying these coats *dos à dos*. Five sutures were needed for this. In bringing together the rest of the bowel Lembert's sutures were employed, about twenty being inserted. Extra sutures were put in where they seemed to be indicated, bringing up the total to over forty.

As the piece of omentum opposite the injury was the reverse of pure, it was thought best to cut it right away. It was therefore ligatured and excised.

After this the peritoneal cavity was carefully purified with hot boracic solution, about 20 per cent. in strength, and the toilet of the peritoneum was completed. The external wound was closed by silk sutures. No drain was put into the peritoneal cavity. Antiseptic precautions were observed throughout. The operation lasted an hour and three quarters.

A detailed report of the after progress and treatment is not needed. He made an uninterrupted and easy recovery. No constitutional nor local disturbance ensued.

In the night following the operation his temperature reached 100·4°, and then subsided to normal. During the fifty-six hours ensuing upon the operation he was fed exclusively by the rectum. Afterwards a graduated scale of fluid nourishments was allowed until convalescence was quite established.

He continues in good health, and is present this evening in the next room.

Remarks.—This case appears to me to give most valuable support to the formula that "in cases of abdominal injury without external wound, when the injury is followed by symptoms of internal lesion and peritonitis, an exploratory laparotomy should be performed."

Symptoms.—In this case, as in the first, peritonitis was indicated by certain well-marked symptoms; there was distinct febrility, there was rigidity of the abdominal muscles, and there was pain with tenderness on pressure. These symptoms, taken with the fact of a severe injury like that of a kick of a horse below the navel, were quite enough to guide one.

The absence of vomiting in such cases is not to be estimated as contra-indicating lesion of intestine or as negativing peritonitis. The surgeon should not be deluded into procrastination because there is no vomiting or very little of it. Experience has shown that sickness is a very inconstant symptom in both intestinal lesion and early peritonitis. When present and carefully interpreted, vomiting may prove a valuable guide, but its absence has too often led to fatal delays.

In both cases I observed rigidity of the muscles of the abdominal wall, and that it was increased by the contact of fingers. I attach great importance to this symptom (muscular rigidity) whenever it is found in joint diseases or in abdominal injuries. Pain, when evinced by pressure of the abdominal wall, independently of other symptoms, is, I need not say, of little value in the diagnosis of peritonitis. Pain with high temperature and muscular rigidity is of decisive value, but its absence is not to be read as meaning that there is neither internal lesion nor peritonitis. Moreover, I may say that the subsidence of pain, and the state of masked pain, has too often fatally misled medical attendants in such cases as the one under discussion.

Pulse.—This is also, singly, an unreliable guide. The quick wiry pulse that authors have been so fond of quoting is a condition that I have constantly looked for, but very rarely found. Perhaps my sense of touch has not been educated to the right point of refinement.

Whilst I am making these brief remarks on the symptoms of intestinal lesion without external wound, I may add that though I differ from Mr. Mayo Robson and others on their observations upon the pulse and vomiting in these cases, I quite agree with them in the tenor of their remarks on the symptoms of shock. If the patient were seen immediately after the infliction of the injury, and shock were present, that symptom alone could not be relied on as indicating decisively a rupture of an internal organ. As a matter of fact the hospital surgeon sees these cases, unfortunately, when such shock as did occur has more or less completely declined. On the other hand, the absence of marked shock either at the time of injury or later has frequently, it must be admitted, fatally misled the surgeon. My experience in these two instances may have been exceptionally favorable to diagnosis and treatment, but looking back over many years of hospital life I cannot believe that I have been so especially favoured in this respect.

Immediately after excision the mesenteric wound appeared to be not more than three eighths of an inch in width.

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category as those described in this and my former paper, viz. rupture or contusion of intestine without external wound. I am indebted to my friends Mr. Battle and Mr. H. Betham Robinson for the careful search they have made through the records of past years. I cannot believe that any case of a similar character has escaped them.

The table contains fourteen cases, including two of my own.

An analysis of these yields the following facts: there are twelve deaths, and two recoveries—thirteen deaths if the fatal result after secondary operation for artificial anus is included.

The causes of the deaths are—

Exhaustion after secondary operation for artificial anus	1
Hæmorrhage from unsecured artery	1
Other abdominal visceral injury	2
Peritonitis	2
Failure of suture and suppurative peritonitis	1
Shock and exhaustion	5
Peritonitis and shock	1
	13

Primary artificial anus was made in two cases. The lesion in one case (death from other abdominal injury) consisted of a contusion of the colon and mesocolon.

In the other twelve cases the small intestine had been injured.

Date of operation.—In one case the operation took place on the fourth day. The shortest time that elapsed between the accident and the operation was nine hours: the patient died of suppurative peritonitis.

The ages of the patients vary from eight years to fifty-eight. We may infer, therefore, that age did not materially influence the results, for the majority of the patients were between twenty and forty.

The three factors influencing the operation favorably are—(1) its early and (2) absolutely complete performance, and (3) the induction of an aseptic condition.

DESCRIPTION OF PLATE IV.

To illustrate Mr. Croft's Case of Rupture of the Small Intestine without external wound.

The drawing, by Mr. Lewin, shows the portion of intestine which was excised. The intestine has been turned inside out. It measured about half an inch at its mesenteric border, and two inches and three quarters at its opposite or free border, before it had been placed in spirit.

A A indicate the rupture (which was about three eighths of an inch in diameter), and a patch of contusion and inflammation.

B indicates the upper edge of the counter-abrasion.

The lesions of the peritoneal surface were less marked as to degree.

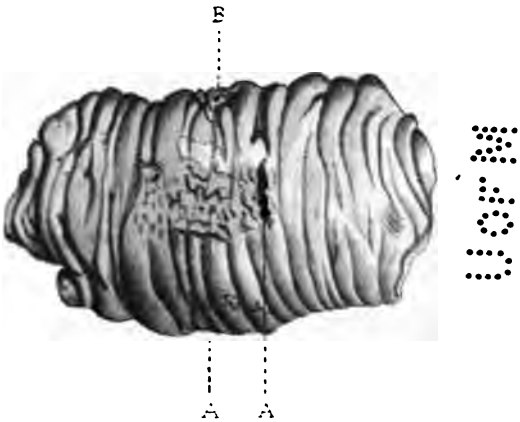


Fig. 3.

Lewin, del.

Davidson & Co. chromo-lith.

Table of Cases previously recorded.

No.	Operator and reference.	Age.	After injury.	Symptoms.	Lesions found.	Treatment.	Result.	Cause of death; remarks.
1	Dr. Gregory, St. Louis, unpublished, 1876	—	—	—	Rupture of ileum	Laparotomy; suture	Died, 6 hours	Shock and exhaustion. Operation undertaken when too late.
2	Bouilly, *Mém. Soc. de Chirurg.*, 1883, p. 690	29	23 hours	Incipient peritonitis, fæcal vomiting	Rupture of small intestine, 3 inches; severe bruise of intestine above rupture	Laparotomy; resection of five inches of small intestine	Union failed; fæcal fistula formed; died, 10 days	Suppurative peritonitis. Post-mortem.
3	Fitzgerald, *Australian Med. Journ.*, 1883, p. 264	58	20 hours	Signs of strangulated hernia. His truss had been pressed violently against a descended hernia	Ruptured small intestine	Laparotomy; wound sutured	Died, 8 hours	? Exhaustion and shock.
4	T. M. Girdlestone, *Australian Med. Journ.*, 1883	22	4th day	Shock, peritonitis, vomiting	Ileum almost completely ruptured; lacerations of omentum	Laparotomy; excision and suture of wounded bowel	Died, 1½ hours	Exhaustion and shock.

No.	Operator and reference.	Age.	After injury.	Symptoms.	Lesions found.	Treatment.	Result.	Cause of death; remarks.
5	Chavasse, *Mém. Soc. de Chirurg.*, 1885, p. 123	23	?	Kicked by horse. Shock, peritonitis, constipation	Colon badly contused in two places; intestine and meso-colon infiltrated with blood	Laparotomy; no suture; cleaning and draining	Died, 6 days	Pancreas contused.
6	Demons, *Cong. Franc. de Chirurg.*, 1885	Male adult	?	Crushed between cart-wheel and wall	Circular rupture of intestine	Laparotomy; Lembert's sutures; cavity purified	Died	Another wound of intestine. Post-mortem.
7	Edm. Owen, *Lancet*, 1885, vol. ii	Adult	41 hours	Fell, when drunk, across edge of board. Shock, peritonitis	Ileum ruptured 1 inch	Intestine clamped and left outside, to form artificial anus	Died, 6 hours	Exhaustion, shock. No post-mortem.
8	E. A. Waggoner, St. Louis, *Cour. of Med.*, 1886, vol. xvi, p. 204	8	27 hours	Walked 400 yards. Shock, violent peritonitis	Rupture of ileum 2½ feet above ileo-cæcal valve; much feculent extravasation	Laparotomy; wound sutured	Died, 2 hours	Peritonitis.
9	Mayo Robson, Oct. 29, 1886, *Clin. Soc. Trans.*, 1888, p. 122	24	60 hours	Those of obstructed intestine	(1) Rupture of jejunum 3 feet from pylorus. (2) Another rupture 2 feet from pylorus; peritonitis	Artificial anus at larger rupture; smaller closed by Lembert's sutures	„	Acute peritonitis.
10	E. Atkinson, Aug. 13, 1887, *Clin. Soc. Trans.*, 1888, p. 122	28	9 hours	Shock; absence of liver dulness	Half-inch laceration of jejunum	Enteroraphy; Lembert's sutures	Died, 42 hours	Purulent peritonitis.

11	J. Croft, March 6, 1887, *Clin. Soc. Trans.*, 1888, p. 252	34	18½ hours	Shock, sickness, peritonitis. Had been jumped upon	Rupture high up in ileum, ⅔ of circumference; laceration of omentum and mesentery; fæcal peritonitis	Primary laparotomy and artificial anus; purification of peritoneal cavity	Recovery	
						Secondary 4 weeks later; excision of artificial anus; enteroraphy; Lembert's sutures; operation, 2¼ hours	Died, 13 hours	Congestion of lungs; exhaustion. Post-mortem. Enteroraphy absolutely complete. Specimen in St. Thomas's Hospital Museum.
12	J. Croft, May 22, 1889, unpublished	14	15½ hours	No vomiting; shock not marked; peritonitis acute. Kicked by horse	Ruptured small intestine near end of jejunum ⅜ inch in diameter; contusion of opposite wall; acute peritonitis, fæcal	Laparotomy; excision of injured segment of bowel; excision of injured omentum; enteroraphy; purification	Recovery	Living at present, and quite well.
13	C. K. Briddon, *New York Med. Journ.*, 1889, p. 692	39	About 30 hours	Struck by waggon-pole. Collapse, pain; dulness in lower abdomen	Ileum ruptured at mesenteric attachment; blood in peritoneal cavity; rectus muscle ruptured	Laparotomy; Lembert's sutures; irrigation with water at 105°; puncture for tympanites	Died, 19 hours	Hæmorrhage from unsecured intestinal vessel; blood in cavity of peritoneum; blood passed by bowel twice in the night. Post-mortem.
14	Wm. Anderson, not published, Feb. 8, 1890	M., 8 years	25 hours	Fell on anvil, 12 feet. Dulness below umbilicus; peritonitis	Ileum ruptured and widely open for 1½ inch; peritonitis	Laparotomy; excision of injured segment of bowel; enteroraphy; purification; Lembert's sutures	Died 18 hours after operation	Shock of operation and peritonitis; enteroraphy complete.

XXV.—*Abdominal Nephrectomy for large sarcoma of the left suprarenal capsule: recovery.* By J. Knowsley Thornton. *Read March* 14, 1890.

IN the autumn of 1888 I received a letter from Dr. Black, of Halifax, Nova Scotia, from which I extract the following sentences:—"You may remember my mentioning to you during one of my visits to the Samaritan Hospital this summer the case of a patient of mine at the time in London, who was pronounced to have splenic tumour or enlarged spleen. She was being treated by applications of electricity, with supposed benefit. She came back here, and on my return last month I found that the growth had increased materially. I have been making the electrical applications again, but the increase continues, and her discomfort is decidedly aggravated of late. . . . She is a woman of wonderful nerve and pluck, and insists now on having removal of this mass attempted, if any hope at all of success can be held out. I have suggested her seeing you with that end in view."

Dr. Black then mentioned that Dr. Keith had performed oöphorectomy for the patient some years before, and that she had been under his care, and that of his son, for the electrical treatment. He gave details as to the size of body, &c., and added, "Having seen some Samaritan Hospital work I have strongly advised her going to you, and hope, if she does that, results will be good, though there is no doubt it is a formidable undertaking."

I gave the only possible reply, viz. that I would be happy to consider the case carefully if she would come over and see me. She came over early in 1889, but again consulted Dr. Keith, who stuck to his original diagnosis of enlarged spleen, and sent her to the Riviera. Arriving there increasingly ill, she consulted Dr. Bright, of Cannes, who strongly advised her to return and see if I would operate.

I saw her at the Hôtel Métropole on April 8, and came to the conclusion that the tumour was not splenic, but renal, and that it could be removed, though the risk would be great. There was, and had been, an entire absence of renal symptoms, and the urine was quite normal, negative symptoms

observed in another case of large sarcoma connected with the kidney, which I successfully removed seven years ago, the patient still enjoying good health.

My reasons for concluding that the case was renal rather than splenic were that all the symptoms usually associated with such an enlargement of the spleen were absent, and that the physical signs, on examining the abdomen, were those characteristic of renal tumour, the inner border of the tumour being encircled by resonant intestine, which could not be separated from it, but could on manipulation be made to contract into a raised ridge on the surface of the tumour. In all the splenic tumours which I have seen the dull note has been marked up to the very edge of the tumour; the hard, well-defined edge and notch of splenic tumour were also absent. The mass was lobulated, and varied greatly in consistence, a condition I have never observed in a splenic tumour, while it is the common condition in renal and retro-peritoneal sarcomata. At the lower part, almost in the iliac fossa, there was a large smooth somewhat mobile projection from the tumour, which proved to be the displaced, and somewhat enlarged, though healthy kidney.

It is worthy of note in connection with the absence of renal symptoms, and the presence of a healthy kidney on the surface of the tumour, in this as in the previous case referred to, that Mr. Eve and Mr. Targett, who have kindly examined the specimens microscopically for me, suggest that they are probably tumours of the suprarenal capsule rather than of the renal. Here, then, we may have an important clinical observation for distinguishing sarcoma of the renal capsule or kidney from that of the suprarenal capsule, for in my experience the former tumours do give very marked renal symptoms, such as pain, hæmaturia, and irritability of bladder.

The patient, who was a married lady of 36, mother of one child, aged thirteen, had another curious pathological condition, which had developed soon after the oöphorectomy performed by Dr. Keith six or seven years before I saw her. She was covered all over with long silky black hair, and had to shave her face just like a hairy man. She was very uncertain as to the exact date when she first noticed the tumour, and the only point in her history which appeared to have any possible bearing upon its growth was that two years ago she had a sudden feeling in the left side as if something had been strained or torn, which was followed by uterine hæmorrhage, the only recurrence of this since the removal of the ovaries.

The close connection I have observed between renal and ovarian symptoms makes me think that this was caused by the dislocation of the kidney into the position in which I found it at the operation.

Her symptoms were indigestion, flatulence, constipation, discomfort from distension, and an absolute dread of food. There was no history of malignant disease in her family.

On April 11 Mr. Murray administered chloroform, and, assisted by Mr. Malcolm, I removed the tumour, using Langenbüch's lateral incision. The vessels in the mesentery and the renal vessels, which also supplied the tumour, were the largest I have ever seen in any abdominal operation. The spleen was normal, but slightly adherent to the posterior part of the tumour; the pancreas was very closely adherent, and the large vessels on its surface after separation were very difficult to secure. I was obliged to pass a fine needle into the substance of the gland, carrying a thin silk ligature, in three separate places. The renal vein was quite as big as an ordinary vena cava. The tumour might quite well have been peeled away from the kidney and this organ left behind, had it not been for the renal vessels being so enormously enlarged and supplying the tumour. The lodging-house people had not proper weights for weighing so large a mass, but comparing it with the other tumour of the same kind previously removed, which weighed 11 lbs., I should say this one weighed fully 20 lbs. I drained the lower pouch with a Keith's glass tube, but practically there was no oozing, and I removed the tube in twenty-four hours. The reactionary temperature reached 102°, with a pulse of 108; there was a good deal of trouble with phlegm on the chest, and from atony of the descending colon it became greatly distended with flatus and very painful; this was not to be wondered at considering the very extensive division of its mesocolon in removing so large a tumour. The remaining kidney acted well, and on the whole, and considering the formidable nature of the operation, she made a good recovery, but was much troubled with intestinal flatulence, which kept her from sleeping. The temperature fell in the mornings to 99°—99·2°, in the evening it was usually about 100°, and the pulse was rarely below 100. The very long wound healed perfectly by first intention. On one or two occasions there was a rapid rise of temperature to 102° and 103°, apparently in connection with trouble with flatulence and the action of the bowels, but it always fell as quickly as it rose.

The after history of the case, which Dr. Myrtle is about to relate to the Society, makes it probable that the pain in the region of the splenic flexure of the colon, which appeared to me to be due to flatulence, was, in part at any rate, due to the gradual formation of pus deep down in that situation. During the fourth, fifth, and sixth weeks the morning temperatures were normal, pulse about 80; but there was generally though not always an afternoon or evening rise, which was occasionally considerable when she was much troubled with flatulence; there was also at times a greenish, slimy, offensive discharge with the motions. During the whole time the patient took nourishment well, and slept well with a bromide draught at night, but she decidedly lost flesh. The nurse, a very excellent one, was inclined to think there was a good deal of hysteria in the case, the patient being readily made to forget all her pains by anything which interested and amused her, and I decided that she might leave town, resting for a time at Harrogate on her way to Scotland. Just before she left she complained a good deal of a pain in her left shoulder, and I detected for the first time some indefinite dulness in the back, but I could not detect anything wrong with the lung, though she occasionally had fits of rapid respiration. During sleep, however, the breathing was always quite tranquil. I will leave the further history of the case to Dr. Myrtle, merely mentioning that she wrote to me from Halifax, Nova Scotia, on October 17, saying that she had borne the voyage home well in August, had gained 32 lbs. in weight, and lost the cough and shortness of breath, could walk a mile without fatigue, and drive any distance.

XXVI.—*Case of Abscess subsequent to removal of left kidney, &c., finding vent through left lung. Recovery.** By A. S. Myrtle, M.D. *Read March* 28, 1890.

MRS. B., whose case up to the date of her leaving London is described by Mr. Knowsley Thornton in the preceding communication, arrived in Harrogate on May 22, 1889, and I saw her early on the morning of the 23rd. She in a sepulchral voice said, "I am dying," and this seemed quite probable; her features were pinched, her face was ashy grey, the lips were purple, the pulse being so feeble and flickering that it could not be counted; temp. 104·2°. She lay on her back. Respirations were 40; extremities cold. There was constant nausea and distressing short hacking cough. Hot applications were ordered for the sides, arms, and legs. A few drops of brandy and ammonia in hot water were given every few minutes, and in an hour there was some attempt at reaction. I left her, ordering Valentine's essence of beef with brandy and hot water to be given every twenty minutes. 9 P.M. she was improved in all respects, but so utterly exhausted, that I did not think she would live till morning.

May 24.—She had passed a restless night never moving from the recumbent position, and had taken nourishment every half-hour. The sickness was less and the cough quieter. Pulse 140; temp. 102°. The urine was passed freely, and was of natural appearance. For the following three days and nights she continued much in the same condition, the least movement causing a fit of coughing, so that I did not attempt to make any physical examination.

May 27.—She was decidedly better, and had slept for two hours after fifteen grains of antipyrin. She complained of pain under left clavicle, and also under left short ribs; pulse was 120, temp. was 101°. She was afraid to move. There was great emaciation, the right side of the chest rose and fell freely and forcibly, the left scarcely moved at all. On examining the right lung I found no sign of disease, and as for the left, neither auscultation nor percussion afforded any

* Sequel to Mr. Knowsley Thornton's case, page 150.

evidence of its existence. I had no opportunity of examining the back, and was not allowed even to look at the abdomen, as the slightest touch of her own hand caused acute stabbing pain, so much so that she declared it gave her the impression that a knife or pair of scissors had been left in her body. Here I may remark that the mammæ had completely disappeared, and that her cheeks, upper lip, and chin were covered with soft darkish down, such as you see on a lad of eighteen or nineteen, and that the arms and forearms were also hairy. Every evening she had a return of fever with aggravation of all her troubles, ending in profuse perspiration. On June 12 double quotidian ague supervened; she knew it well, having had it before. Quinine did not agree with her, so I gave Warburg's tincture, and in three days she was free of the ague. No sooner had this been accomplished than congestion of the liver occurred, with violent vomiting of dark green bile with thick mucus. Neither medicine nor food was kept down for about thirty hours. Comfort was derived from the use of ice at intervals, and enemata of beef-tea and brandy. I learned that mercury even in its mildest form induced an approach to syncope, so I prescribed small doses of sulphate of soda with fluid magnesia and hydrocyanic acid. After a few doses the bowels were freely moved; the discharge was like pitch, and most offensive. She gained ground during the rest of month.

July 2.—Cough, pain in right side, and hectic occurred. She disliked all soups and stimulants, and was therefore ordered No. 2 koumiss for forty-eight hours. This was most agreeable, as it gave the stomach a rest. At the end of that time white fish, light pudding with stewed fruit were relished.

July 7.—Is gaining strength and making a little flesh, left chest remains immoveable. The question then occurred to me, was it possible that a branch of the phrenic nerve had been severed during the removal of left kidney, leading to paralysis of the diaphragm? I wrote to Mr. Knowsley Thornton, and asked him if he could account for her loss of respiratory function in left side, as well as the constant dry cough. In answer he told me he had observed the want of expansion in the left chest, but could not account for it. I then questioned Mrs. B. and her husband about the condition of the lungs before the operation. Both assured me that she had never experienced any trouble with her chest, that the various organs had been carefully examined immediately before the operation, and had been pronounced perfectly sound in all respects.

July 9.—The patient was so much stronger that she was removed to a couch.

July 11.—She went out of doors in a Bath chair.

July 14.—The improvement continued in spite of cough, pain in the side, and fever at night. She was able to walk a little, and remained out on the "Common" all day.

July 18.—At 1 A.M., after a severe and protracted fit of coughing, she felt something give way in the left side, her mouth immediately filled with pus, and its taste and smell gave her a great shock. I was with her within four minutes of the occurrence; she was on her bed, her head hanging over its side, and from her mouth there poured a continuous flow of the most offensive purulent matter I ever met with. I at once assured her it was the very best thing that could have happened, that an abscess had found an exit through her left lung, and in all probability would lead to her speedy restoration to health. The quantity of pus discharged was 11 oz. At 5 P.M. she was much calmer. The discharge continued, the pain had abated. She had been able to take plenty of nourishment. 10 P.M., pulse 84, temp. 99°. The quantity of pus discharged since 2 P.M. amounted to 10 oz.

July 19.—She had a sleepless night for fear of being choked. Flatulence was complained of, and the wind from stomach having the taste and smell of the discharge from the lung, one grain of permanganate of potash in capsule was ordered every three hours. At 10 P.M. she had passed comfortable day with some sleep. The discharge was less offensive. The condition of the patient remained much the same till the night of the 25th, when she fell asleep at 9 P.M. and never awoke till the following morning, when there was no discharge, slight cough, a little pain still, pulse and temperature normal. From the bursting of the abscess till the night of the 25th the discharge in twenty-four hours never measured less than 20 oz.; then it ceased as suddenly as it commenced, and there has been none since. During all the time Mrs. B. was under my observation the single kidney did the work of two, the secretion being not only healthy but most copious. On removal of its fellow the external wound healed kindly enough, but deep-seated inflammation must have set in early, leading to the formation of pus; then followed diaphragmatic empyema, paralysis of muscle, fixity of left thorax, adhesion of lung, and so the abscess worked its way until it found vent through the bronchi.

On August 6 she sailed for Nova Scotia from Liverpool,

and on September 7 her husband wrote, "Mrs. B. stood the voyage uncommonly well and enjoyed it very much; she is able to drive out daily without fatigue. She has no cough and no expectoration, although she suffers occasional pain in the left lung."

November 23 she wrote, "I have improved by leaps and bounds, and have gained 2 st. in weight, and am able to walk or drive any distance. I am much like my old self, and have all the external appearances of other women. You have seen me in the most desperate straits, and may now think of me as cured."

XXVII.—*Obscure case of Acute Abdominal Obstruction in a boy æt.* 10: *laparotomy: removal of the suppurating appendix vermiformis: recovery.* By HERBERT W. ALLINGHAM. *Read March* 28, 1890.

HOWARD J., æt. 10, was admitted into the Great Northern Hospital on January 1, 1890, with symptoms of acute abdominal trouble.

The history of the case was as follows. The patient, a healthy, well-nourished lad, fell ill while at school, about September 4, 1889. Dr. Mason, of Maidenhead, attended him, and pronounced him to be suffering from typhoid fever. He apparently quite recovered from this, and came home about the third week in October. He afterwards returned to school for the remainder of the term, and was quite well when he came home for the Christmas vacation.

On December 30, while playing with some other boys, he fell out of a go-cart and complained of pain in the stomach. However, he was able to go to a neighbouring pond and slide there. But he was then seized with sickness, and obliged to go home. He complained of severe pain in the bottom of the stomach. Dr. Rout, of Hornsey, was sent for, and prescribed for the boy. On January 1, two days from the first attack, Dr. Rout kindly called me in to consult with him, and after a careful consideration of the symptoms we agreed that if any good was to be done he must be immediately operated on, he was therefore removed for that purpose to the Great Northern Hospital.

He was then in the following condition: he lay in bed on his back with his legs drawn up; his face was pinched, his expression anxious, the tongue dry and red, and the pulse rapid and hard. The abdomen was generally swollen, and there was possible fulness in the middle line. It was extremely tender to the touch and slightly tympanitic. *Per rectum* there was nothing to be felt. The bowels had acted once soon after the accident on December 30, but not since. He had vomited five times, but the matter was never stercoraceous. No flatus had been passed. The urine was normal in quantity and character. When I saw him the temperature was 102°, but had previously been between 102° and 103°.

The boy was evidently very ill, and had marked symptoms of acute abdominal trouble, presumably traceable to the fall out of the go-cart. It was thought that there might be a twist of the gut, or an intussusception.

On arrival at the hospital chloroform was at once given, and the abdomen thoroughly washed over with carbolic lotion, 1 in 30. Under the influence of chloroform the abdominal muscles were relaxed, but nothing abnormal could be felt.

I then made an incision in the linea alba below the umbilicus for about 2½ inches; all the bleeding points were clipped, and the peritoneum was opened to the extent of the wound. I inserted two fingers into the abdominal cavity and explored its contents; I found nothing wrong with the small intestine, and examined the right iliac fossa. I now came upon a distinct hardish mass, which felt quite abnormal; this was very gently and with some difficulty pulled towards the opening made by the incision. On being drawn forward it appeared to be large intestine covered with lymph. Since there was not sufficient room to bring the mass out, the incision was enlarged up to the umbilicus, and the mass drawn out of the abdomen.

It was discovered to be the cæcum, together with the appendix vermiformis, the latter of which was about 6 inches long, very distended, and adherent by its apex to the cæcum, which was very inflamed, red, ragged, and covered with recent lymph. While the appendix was being examined it burst, and a quantity of fœtid pus came out, but precautions had previously been taken which prevented its finding its way into the general abdominal cavity. The appendix was carefully separated from its adhesion to the cæcum, and was tied low down towards the cæcum with fine silk twist, and then cut off; the remaining portion of the stump was sewn with Lembert's sutures so as to bring the peritoneal edges into apposition. The surrounding lymph was gently wiped off; and the stump, after being bathed in carbolic (1 in 20) was returned, together with the inflamed gut, into the abdominal cavity.

The incision was now completely closed with silkworm gut; no drainage-tube was used, nor was the peritoneal cavity washed out.

I now saw that the appendix contained a small, hard, laminated fæcal concretion, which was about the size of a cherry-stone.

Previously to the operation all the instruments and sponges

had been soaked in carbolic, 1 in 20, and antiseptic dressing was used for the wound. The boy stood the operation well, but was once sick after it; he had a good night after a dose of opium. His temperature that evening fell to normal.

January 3, 1890.—The wound was dressed and looked well. There was no abdominal pain or discomfort. Temperature normal, tongue moist, pulse 90. He felt very hungry. The bowels had not yet acted.

January 7.—The wound was redressed and looked quite healthy. Temp. 99·4°; the abdomen was soft and free from tenderness. The patient slept well without a draught. A single enema failed to act.

January 8.—Another enema and three drachms of ol. ricini produced the desired effect. Temp. 99. The abdomen was soft and healthy. Two stitches were removed.

January 9.—Temperature in morning 100·6°, in evening 101·2°. Some pus collected in the track of the wound. All the stitches were removed and the pus let out. The wound, which had united entirely for its upper three fourths, was strapped. Fluid diet was continued. There was no abdominal pain.

January 11.—On the previous day temperature rose to 102°, and was maintained at that height. The discharge of pus ceased. There was a little hardness and tenderness in the right iliac fossa. The boy seemed well and slept well. As the bowels had not acted since the 9th he was given a simple enema.

January 12.—Temperature was gradually and steadily falling, and the hardness and tenderness in the right iliac fossa was disappearing.

January 14.—The wound was quite healed, and the boy was apparently quite well. Temperature normal; the bowels were regular. The abdomen was quite natural, soft and free from tenderness. He was now ordered solid food, and was allowed to get up on the 17th.

On the 22nd he was discharged in excellent health, and was sent to an instrument maker to procure an abdominal belt.

This case is, I think, worthy of record as an interesting addition to the list of successful cases of exploratory laparotomy, performed for the relief of obscure but urgent obstructive abdominal symptoms.

Its history seemed to point to some internal twist, intussusception, or perforation, the result of the supposed recent typhoid. It will be seen that the boy was apparently

perfectly well until his fall on December 30, when he complained of "something tearing away inside," and of violent pain in the stomach. This was followed by vomiting and constipation; there was no sign of any external hernia.

As the external means of diagnosis were so very uncertain, median laparotomy offered the best chance of saving the patient's life.

The whole abdomen was intensely tender and swollen, but no separate swelling could be localised anywhere. Had it been certain that the mischief was caused by the appendix, it would have been far easier to make an incision in the right linea semilunaris.

The success was undoubtedly due to early operation. Had that been longer delayed, the appendix, which was already greatly distended, must have burst and pus been extravasated into the general peritoneal cavity, there being no tendency to the formation of an encysted peritonitis.

The vomiting, increasing distension of the abdomen, the rise of temperature, and the constipation, all pointed to aggravated abdominal trouble, and called for an exploratory laparotomy as soon as possible.

Cases of this kind, some successful, some the reverse, have been published by Mr. Treves, Sir Dyce Duckworth, Dr. Ball of New York, and others, and they have shown that it is the appendix, not rarely the cæcum, that is the cause of the mischief. Fitz has stated that more than three fifths of all cases of perforated appendices are due to concretions of foreign bodies lodged in its canal.

I must express my thanks to the sister for her skill in nursing the case, and to Mr. Santi, the house surgeon, for his assiduity during the operation, and for the excellent notes he has taken.

XXVIII.—*Some cases showing Hereditary Enlargement of the Spleen.* By CLAUDE WILSON, M.D. *Read March* 28, 1890.

THE genealogical chart accompanying the present paper shows a condition in which an enlarged spleen, accompanied by a sallow or subicteric complexion, appears as an hereditary condition. In some of the cases the liver is also enlarged. So far as I can ascertain, no cases of a similar nature have been hitherto recorded.

The family have been patients of my partner, Dr. Johnson, since their coming to reside in Tunbridge Wells in 1880, and during the last three years I have had frequent opportunities of seeing most members in a professional capacity. Mrs. A. P. and her two eldest children were seen by Sir William Gull in about 1858: she was seen also in 1887 by Dr. Ord. All the rest who show enlarged spleens have been examined by Dr. Barlow, with the exception of Mrs. T., who along with her children has been seen by Dr. Playfair.

To avoid repetition hereafter, I may here state that the whole family have always been in extremely comfortable circumstances. There is little or nothing to suggest that a specific element enters into any of the cases, and I believe it to be wholly absent from all. Though some of the children (third generation) show slight evidences of rachitis, I do not believe that this has anything to do with the condition of their spleens, and Dr. Barlow allows me to state that he fully endorses this opinion.

A. P., born 1823, married 1850, a short stout man of florid complexion, was considered very delicate when a youth. Enjoyed very good health from the time of his marriage to that of his wife's death in March, 1888. Was very deeply affected by this event, and within a few weeks developed saccharine diabetes, from a non-progressive form of which he now suffers. Has always been more or less deaf, and I am told that his deafness was pronounced by Toynbee to be nervous.

Mrs. A. P., born 1825, married 1850, died 1888. Her family

y is negative, with the exception of the fact that liver ers appear to have been common. Her father lived to be er mother died from some liver trouble and dropsy, aged 48. d two sisters and one brother. The youngest sister, rs her junior, died after childbirth, owing it is said to ismanagement. The other sister had delicate lungs, l at St. Moritz in 1879. The brother suffered from , and died in 1876. These are all the facts I have e to glean, but the family state that neither of her nor grandparents, nor any of her brothers, sisters, nts, nephews, or nieces, had sallow complexions.

as brought up mainly in Brixton and Kensington, healthy girl, and is said to have had an unusually nd fresh complexion. Since her marriage she has n London, and subsequently at Wimbledon, Torquay, idge Wells. In 1851, shortly before the birth of ild, she had an attack of jaundice, the nature of e been unable further to ascertain. Since then always more or less sallow.

or thereabouts, she evidently had an enlarged e and her two eldest children were then seen by Gull, who said that all three had ague-cake. Sir ght that they must all have become infected with where, possibly at Worthing, where about this quently spent some months. In view of the mily history, we may fairly doubt whether Sir right in regarding the trio as three primary

seven children born between 1851 and 1866, six of whom e now living. One died of croup, aged two years and nin nonths.

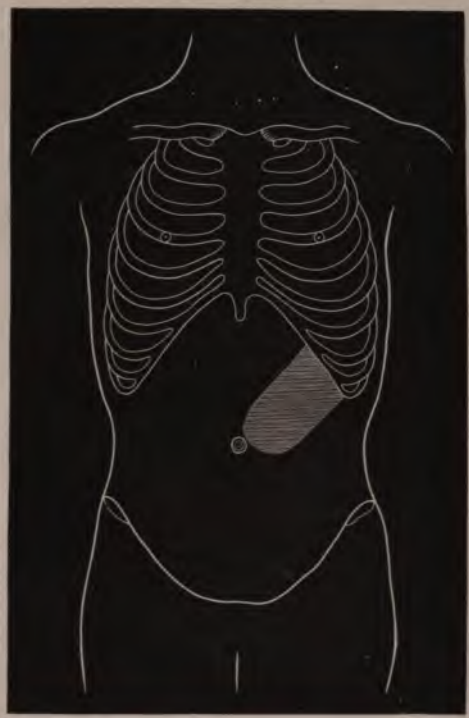
Her genera health was good until 1884, when she began to fail, and became gradually weaker and weaker. Her spleen could then be felt projecting fully three inches below the ribs, and the liver was slightly enlarged, firm and even. She was somewhat anæmic, and had a decided though slight icteric tinge of skin and conjunctivæ.

In the autumn of 1887 Dr. Ord came to see her, but could discover nothing further. Her blood was examined by Dr. Ord and by myself. There was no excess of leucocytes and no pigment granules, and in shape, size, and behaviour the red and white corpuscles were normal. The urine was of low specific gravity but otherwise healthy (*e. g.* Dec. 3, 1887, clear amber, acid, sp. gr. 1012, no deposit or mucous cloud,

no albumen). The uterine system presented no abnormal symptoms. The temperature did not rise above normal till a few weeks before death.

She died in March, 1888, after a very gradual and steady failure of vitality. Unfortunately no necropsy was made, but we believed some malignant condition, which we were unable to discover, to be present. It is of course possible that the constitutional condition involving the spleen was a direct factor in causing her decline, though the fact of splenic enlargement having existed for thirty years without serious symptoms seems rather to negative the idea.

Fig. 4. (Mrs. T.)

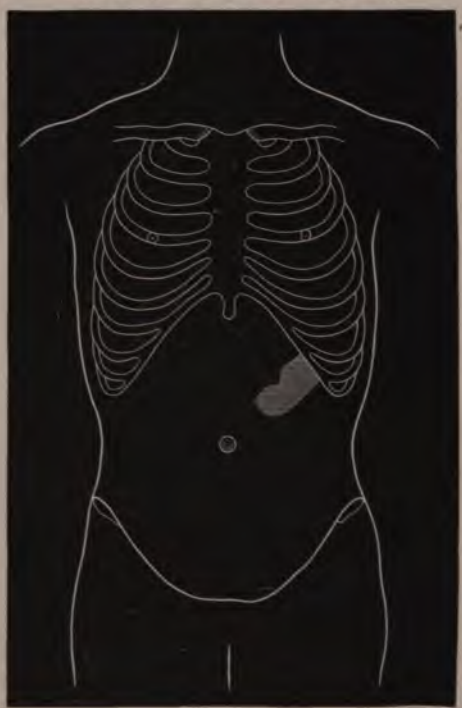


Mrs. T., born 1857, married her first cousin on mother's side, 1887. Became sallow when five or six years old. Was seen by Sir William Gull when about seven, and undoubtedly then had an enlarged spleen. Her general health has always

been good, and her temperament is easy-going and happy. In 1882 had an illness, said to be mild typhoid. In 1884, whilst visiting in Portland Place, London, had an attack of fever with painful ulcers on the lips, attributed to bad water. There was no sore throat.

Since 1871 has been occasionally attacked by "spasms" of pain in epigastrium and behind lower part of the sternum, accompanied by decided jaundice, by chilliness but not shiver-

FIG. 5. (Mrs. T.'s son, vide p. 166).



ing, and almost always by vomiting which usually recurs once or twice. She is sometimes free from these attacks for more than a year; at other times three or four follow one another at short intervals. She knows of nothing which brings on the attacks, which last for a few hours and yield to chlorodyne. On one occasion she passed a gall-stone, the pain then being in the abdomen generally, apparently resembling ordinary colic.

In view of this stone having passed, of the pain yielding to opium, and of the accompanying jaundice, chilliness, and vomiting, it would seem probable that the attacks are due to the passage of small biliary concretions, though they have usually been attributed to gastric disturbance.

Mrs. T. is rather stout; her complexion is always somewhat sallow, and her eyes seldom free from at least a suspicion of icterus. At times even when well there is marked jaundice. Her liver is, Dr. Johnson tells me, somewhat enlarged. The spleen is very large. In the accompanying diagram (Fig. 4) the organ has been filled in by herself. There are no symptoms pointing to any other organs being deranged. She says she easily gets feverish, but is not known to have any definite febrile attacks.

Her husband is quite healthy.

She has four children, of whom the eldest and youngest, both girls, have clear complexions and no enlargement of the spleen. Their health is good. The two boys have both, since three months old, had sallow complexions, and both have spleens which now project 2¼ inches beyond the costal margin, a single well-marked notch being felt in each (Fig. 5). Both children are very susceptible to cold, and easily get chilled and feverish. A cold bath has, whenever it has been tried, disagreed with them, and turned them, to use their mother's expression, "the colour of a daffodil." The general health of both has been better, their mother thinks, since they have been taking arsenic. Neither has enlargement of the liver.

Since the birth of her youngest child, Mrs. T. has had two miscarriages and a still-born child. There were no previous miscarriages.

None of this family are deaf.

A. P., jun., born 1854, in London, married 1880. Lived in London till five years old, and then at Wimbledon till eleven. During these years frequently visited Worthing for seaside change. When between three and five years old was seen and said to have ague-cake by Sir William Gull. He was a dark baby, and became sallow when about three years old. When eight or nine years old became somewhat deaf, and has continued to be so ever since. From 1865 to 1870 lived at Teddington, close to river.

In 1870 went to be under a tutor at Budleigh Salterton in South Devon, his vacations being spent at Torquay, where the family then resided. In 1870 or 1871 his complexion was noted as "semi-olive." He remained four years in South

Devon, in the earlier part of which period he had an illness which was called "gastric fever," and which was attributed to a chill caught while duck-shooting in marshy ground. After this illness he was for some years subject to fainting fits and epistaxis. In 1874 he went to Oxford with the intention of entering the Church, an idea which had to be abandoned on account of his health, which was never good during the three years he spent at Oxford, epistaxis and fainting being frequent both there and at Torquay, where he spent the vacations. In 1878 went to Scotland, and was there off and on for about twelve out of the ensuing eighteen months. During this period his health was better, and he had only three fainting fits and no epistaxis.

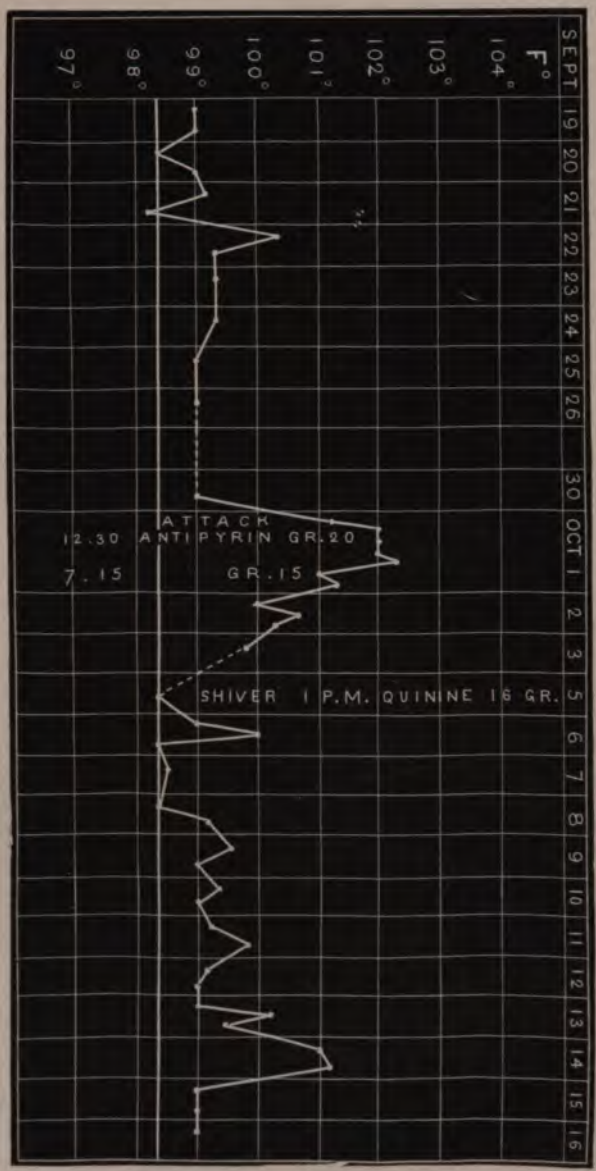
He was married in 1880, and has since lived in Tunbridge Wells. Since this date his health has on the whole been better. He has suffered from indigestion and bilious attacks with some jaundice, and he easily catches cold. Towards the end of 1888 attacks of a more serious nature manifested themselves, and from June, 1889, to the middle of October occurred at intervals of about a fortnight. Each attack begins with a feeling of chilliness, slight shivering, and general uneasiness, soon followed by great pain in the muscles of the limbs and thorax, greatly aggravated by movement. At no stage is there any sensation of great heat. There is decided icterus, the pulse is rapid, and the temperature 101° or 102° F.; the skin is moist but seldom profusely perspiring, and the tongue is usually clean. The spleen, always large, becomes somewhat increased in bulk, and very tender. The same observation applies to the liver, but here the tenderness is not so marked. The urine becomes bile-stained and loaded with urates, and the motions are somewhat but not extremely pale. The attack lasts from three to five days, and gradually subsides. Between the attacks he feels pretty well, though he frequently has some aching in left side, and he is of a bright and happy disposition. The temperature has never been systematically taken for any long period, but during the last half of September and the first half of October, 1889, it seldom fell below 99° F. (chart annexed). The attacks cannot be attributed to any cause, though chills, indiscretions of diet, and excitement have at one time or other been blamed. As to the treatment of these attacks, quinine has been given, but it causes nausea and sickness, and seems to do but little good. Antipyrin reduces the temperature slightly, eases the pain, and gives sleep. In one attack Warburg's tincture was tried with

doubtful efficacy. Between the attacks he is constantly taking arsenic.

General condition (October 9, 1889, between attacks).—A well-built man of about five feet six, and usually weighing, he says, ten stone in his clothes. Complexion dark and sallow, with subicteric tint of conjunctivæ. Quick, at times almost spasmodic in his movements. Sufficiently deaf on both sides to catch but little of conversation unless the voice is raised;

FIG. 6. (Mr. A. P., jun.)

cannot hear a watch till almost touching either ear. Muscles well developed. Dynamometer: right hand, 48 K°; left, 37 K°. No anæmia or anasarca. Heart and lungs healthy. Liver, upper border at fourth interspace; lower projects slightly more than an inch below the margin of the ribs. Smooth and firm, but not hard, and no irregularities or nodules. Spleen projects three inches beyond costal border. Two notches well


SEPT 19 20 21 22 23 24 25 26 30 OCT 1 2 3 5 6 7 8 9 10 11 12 13 14 15 16
F°
104°
103°
102°
101°
100°
99°
98°
97°
ATTACK
12.30 ANTIPYRIN GR.20
7.15 GR.15
SHIVER 1 P.M. QUININE 16 GR.

marked. The general consistence is firm, and between the two notches is a rather harder nodule. Kidneys are healthy. There is never any albumen nor sugar in the urine, and the only abnormalities it ever presents are the bile and urates which appear during the attacks. Ears: drums normal; tuning-fork heard longer through the meatus than through the cranial bones. Blood: red corpuscles normal in form, colour, and size; white corpuscles in due, but not excessive, proportion; characters normal. No pigment granules.

Note (November 18, 1889).—Went to Eastbourne about a month ago, and is still there. Has been quite well and temperature normal ever since he went.

Note (March 21, 1890).—Has had several attacks during the winter. Opium appears to be the most useful drug in treating them. Frequently feels aching in left side between attacks. Temperature between attacks normal.

As to his family, his wife is quite healthy, and he has four children, two girls and two boys. The eldest girl has a decidedly sallow complexion, and that of her sister tends towards sallowness. Only the eldest shows an enlarged spleen, which projects for two inches beyond the ribs. Her complexion first became sallow when three years old: the spleen was not searched for till the present year (1889). She looks frail, but her mother states that she does not seem more delicate than the other children, who, though not exceedingly strong, may be said to be quite healthy. None of the children are deaf. One child died while teething when nearly a year old.

We may dispose of the rest of the family shortly.

E. (female), born 1857. Has been deaf (nervous deafness *plus* Eustachian obstruction—*Toynbee*) since she was about four years old. Has always been very nervous. Has become decidedly sallow during the last few years. The spleen I feel sure is not palpable, as she is said to be constantly feeling for it: I have had no opportunity of percussing. She once had an attack of jaundice following a chill.

H. (male), born 1860, married two years ago, and has one child. Has, I believe, some heart lesion. Slightly deaf. Is said to have had a severe gastric attack from seaweed smells at Worthing when five years old.

L. (born 1864) and J. (born 1866) are both well-nourished, healthy girls.

Remarks.—1. In the foregoing series of cases, those showing enlargement of the spleen and known to be hereditary have descended from father to daughter, and from mother to

sons. If we are to look upon Mrs. T. and A. P., jun., as being hereditary cases, the peculiarity has descended from a mother to both sexes. (Vide genealogical chart.)

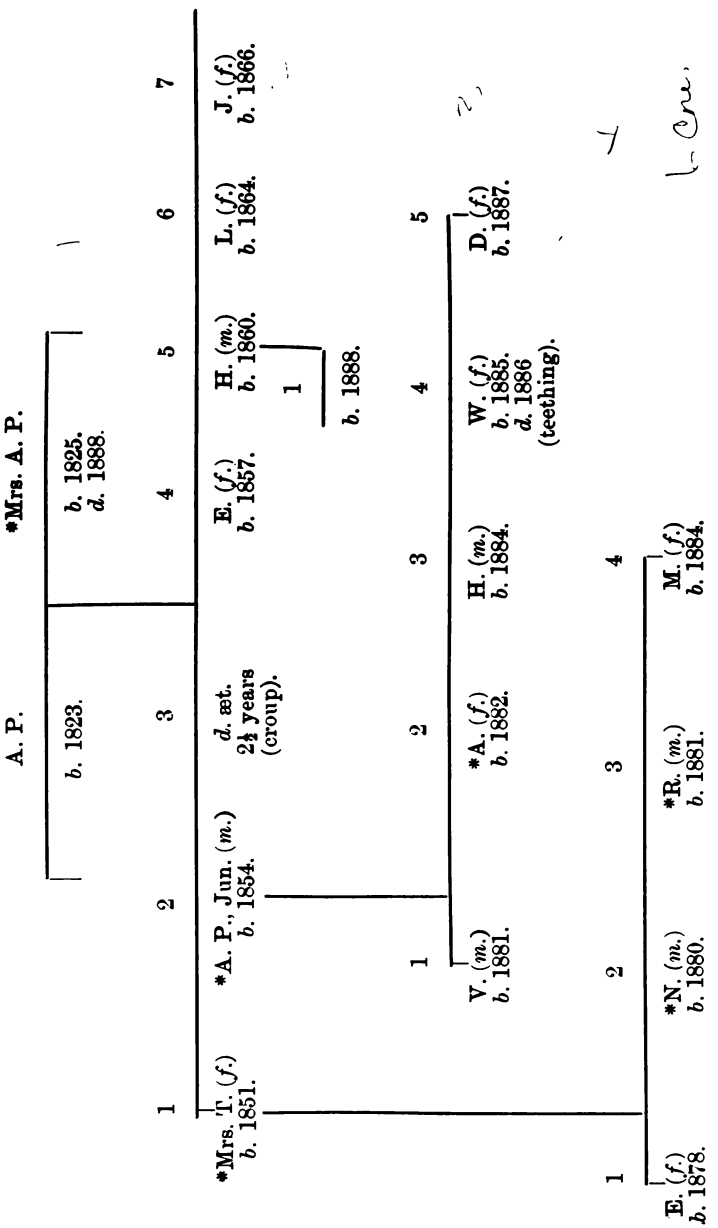
2. It is at least curious that of the six cases of enlarged spleen, three being males and three females, it has hitherto been the males only who have suffered from symptoms obviously connected with the peculiar constitutional condition involving the spleen.

3. As to the nature of the morbid condition present, I must confess to being quite in the dark. Many points suggest malaria, though in no case have we attacks typical of that condition. To suppose the existence of an inherited predisposition to miasmatic influences does not seem to account for the cases; and as all known forms of splenic enlargement may be, with the exception of malarial, excluded, we seem thrown back upon regarding the condition as either a true hereditary malarial taint, or else as being something of a wholly different nature, of which we at present know nothing. While confessing my inability to form any definite opinion upon these alternatives, I may perhaps say that the more I see and think of these cases, the less do they remind me of malaria.

It will be noticed that several of the patients are deaf, the tendency to deafness being apparently inherited from the father. Similarly the tendency to splenic enlargement appears to have descended from the mother. These facts have led me sometimes to wonder if there may not, in some families more notably than in others, be a tendency to the perpetuation of variations in the form and size of organs, and of other constitutional peculiarities. Granted an extreme tendency in this direction, we are perhaps brought a step, but only a step, nearer the solution of the problem.

4. On the past treatment of these cases I can look back with but little satisfaction. The treatment adopted for the attacks to which A. P., jun. is subject has been alluded to. As to treatment of the constitutional peculiarity, all of the patients live on simple and wholesome food, take special precautions against exposing themselves to chills, always wear woollen garments next to the skin, and all are taking arsenic regularly. My opinion is that arsenic has been of service in raising the standard of health in some cases; in others it appears to have had but little effect, and in no case has it reduced the size of the spleen.

Genealogical Chart.



Cases marked (*) show enlarged spleen and sallow complexion.

XXIX.—*A case of Hydatid Cyst of the Liver: serious displacement of viscera: operation: death.* By R. Lawford Knaggs. *Read April* 11, 1890.

HANNAH S., æt. 36, who was sent to see my father by Dr. Carter, of Raistrick, came under his care in the Huddersfield Infirmary. Two years ago she first noticed a lump in the stomach, which had gradually increased. It had caused her no inconvenience except shortness of breath on exertion. She had had two severe attacks of obstructive jaundice. There were numerous and large varicose veins upon both legs, which began to appear about six years ago. The legs swelled after walking, but they had not been worse since the lump became more prominent. She suffered neither from cough nor from palpitations.

There was a large, tense, globular swelling presenting at the epigastrium, and raising that part with the lower portion of the ensiform cartilage into a rounded eminence, thus giving the patient a peculiar appearance. The whole thorax was pushed up, making her look short-necked and high-chested. The swelling contained fluid, and a thrill could be felt from the epigastrium to the lower ribs on each side behind, and into each loin, but more readily on the right side.

The liver dulness extended in front from the level of the third costal cartilage to the right anterior superior iliac spine. The upper limit of dulness was horizontal until it blended with the cardiac dulness over the left apex, but below, the line extended obliquely from the anterior superior spine upwards and across the abdomen to the left costal margin.

A notch was felt in the liver at the umbilicus, and on the right side of this notch a thick rounded liver edge could be traced till it disappeared behind the iliac crest, close to the anterior superior spine. On the left side the rounded undersurface of a cystic tumour, as large as an ordinary gas globe, could easily be felt. The liver moved slightly with respiration.

The cardiac dulness occupied the first and second costal spaces on the left side, and blended below with the liver dulness; there was visible pulsation over this area, and there was a distinct impact from the closure of some of the valves. The

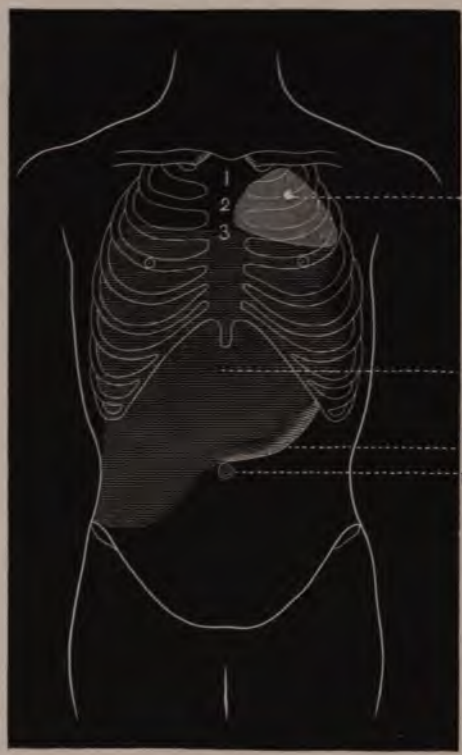
apex was situated between the fourth and fifth ribs in the axilla.

Respiration, compensatory in character, could only be heard at the extreme apex on the left side, and in a triangular space below the breast, where the dulness was not so complete; behind there was harsh crackling down to the base on inspiration, and sucking in of the intercostal spaces.

On the right side respiration could be heard as low as the third rib in front, and to the base behind, but at the extreme base the entry was deficient. There was dulness on both sides behind over the lowest three ribs.

On the right side of the chest were some dilated veins,

Fig. 7.



but these were not prolonged over the abdomen. There was slight jaundice, and the body was covered with scratch marks.

The urine: sp. gr. 1030; no albumen; loaded with phosphates.

The diagnosis was hydatid cyst of the liver, and it was thought that the remarkable displacement of the heart had been caused by the growth of the cyst subsequent to the formation of adhesions between it and the parietes.

The existence of these adhesions made it doubtful whether, when the cyst was emptied, the viscera would return to their natural place, or remain as they were. In either case danger was to be apprehended: if the viscera resumed their natural positions, from the sudden alteration in the relations of the heart and great vessels; if they were unable to fall back, from some interference with the circulation due to a twist or kink in the great vessels, which the collapse of the cyst, on which the heart rested, was likely to produce.

The following treatment was adopted:

On April 26, 1889, the cyst was tapped in the median line with a small trocar, and 47½ oz. of thin, clear, limpid fluid were drawn off. The sp. gr. of the fluid was 1008; it contained no albumen, and no hooklets were found. The heart's apex did not alter its position. Vomiting began half an hour after the tapping, and continued for eighteen hours, when it ceased. During the day about the normal quantity of urine was passed, and the evening temperature was 99·4°.

On the morning of April 27 there was œdema of the eyelids and across the bridge of the nose, and the pulse could barely be felt. Temp. 100°. Under the free administration of brandy she improved, and at night the œdema had gone; the pulse was 130 and very feeble, and the temp. 100·8°.

Only 5 oz. of urine were passed during the twenty-four hours, containing a considerable quantity of albumen and bile pigment. The pupils were contracted and the patient was drowsy. The skin was at first hot and dry, but acted freely after a vapour-bath.

On the 28th the pulse was 112 and the temp. 101°; 19 oz. of urine, containing only a trace of albumen, were passed. Sp. gr. 1020.

On the 29th morning temp. was 98°, evening temp. 103°. Urine increased in quantity.

On the 30th, pulse 80, temp. 99°. Forty ounces of urine were passed, and there was no albumen.

On May 5 she was going on well. The positions of the liver and heart were unaltered. The tumour was much smaller and less tense, and the right superficial epigastric

veins were slightly enlarged. From this date the cyst gradually refilled, and on June 7 the tumour had been for some time as large as before the tapping. On this day the cyst was transfixed with three long hare-lip pins passed through the abdominal wall and marking out a triangular space. The object was to procure adhesion between the cyst wall and the parietes, and the method is highly spoken of by FitzGerald in Heath's *Dictionary of Surgery*. The insertion of the pins was found to be exceedingly difficult, on account of their flexibility and the firmness of the abdominal parietes, and led only to three being employed. They were removed in eight hours, but a smart inflammatory action was set up around them, which, however, in two or three days quite subsided, and the punctures quickly healed.

On June 14 the cyst was tapped with a medium-sized trocar within the triangular space, and 29 oz. of fluid allowed to escape. The cannula was left in and plugged and covered with an antiseptic dressing. The fluid was very different from the first quantity that was removed. It was of a deep yellow-green colour, evidently due to bile, with a sp. gr. of 1011.

It contained masses of flocculent yellow lymph, in which were to be found hooklets and numerous scolices, also pieces of cyst wall, which under the microscope showed the laminated structure.

June 15.—The dressing was saturated, and the bed wet with the fluid that had escaped by the side of the cannula. Thirty-six more ounces of fluid were drawn off, and then the cyst was washed out with boracic lotion by means of a syphon. A quantity of flocculent yellow material and portions of cyst-wall were removed. This was repeated at night. So far the general condition was all that could be wished, and there was no sign of the trouble that followed after the first tapping.

June 16.—The washings were repeated. In the evening there was vomiting, and the temperature rose to 100°. The rising temperature, vomiting, and general febrile symptoms seeming to threaten the commencement of a septic condition, and the frequent obstruction of the cannula by the flocculent masses preventing the satisfactory washing out of the contents, were the reasons which led to the decision to introduce under anæsthesia a large drainage-tube into the cyst to facilitate the more complete evacuation of its solid contents.

June 17.—Under ether the cannula was removed, and an incision made into the cyst upwards from the existing opening.

The cyst was well washed out with boracic lotion, and a large drainage-tube left in; a large quantity of flocculent material escaped. She took the ether well, and the operation seemed well borne. The temperature continued to rise, first to 101°, and finally to 102°. In the evening she was almost pulseless, but there was no œdema of the face, and no albuminuria. She died in the early morning of the next day, eighteen hours after the operation, to all appearances from shock.

Post-mortem.—The heart: The apex was in the fourth space in a line with the anterior axillary fold. There was no enlargement, and no adhesions fixing it in its position. The aortic and pulmonary valves were competent, and the mitral admitted two fingers. The left side was contracted.

The stomach was enormously elongated, and adherent at its lesser curvature to the under surface of the cyst. There was slight effusion of blood into the gastro-hepatic omentum.

The liver weighed 7¼ lbs. Its natural shape was completely altered, and the usual landmarks were unrecognisable. It contained an enormous single hydatid cyst, which probably had begun in the left lobe, a small portion of which, about an inch deep, still remained upon its anterior wall.

The cyst had evidently become adherent by its upper surface to the diaphragm over a space as large as the palm of a hand to the right of the median line (the adhesions were old and very tough), and as it grew the liver had been rotated and pushed backwards and downwards, and to the right. The liver had accommodated itself to its new position. There were well-marked grooves upon its surface, corresponding to projections in the parietes. These facts prevented any return to its original position, and its weight would have been sufficient to have kept it where it was. The cyst wall was fully a quarter of an inch thick. The cyst was collapsed, and contained several handfuls of thick green lining membrane, which was quite detachéd and easily removed.

There was an adhesion to the abdominal wall where the cannula had been retained, but if there had been any produced by the hare-lip pins they had been torn through when the cyst collapsed, and had left no trace.

The collapsed cyst lay under the ribs, and its original situation was taken by the stomach, the cardiac end of which was placed very high up under the left ribs (in the chest). The elongated shape of the stomach had been caused probably by its adaptation to the cyst. There was a flake of recent yellow lymph on the under surface of the cyst. The exposed intes-

tines looked natural, but those coils which had lain in the pelvis were congested and red, had lost their gloss, and with the other pelvic viscera were covered with patches of recent lymph. About a teacupful of serous fluid was in the pelvis.

The heart had been prevented from falling—

1. By the alteration in the shape and position of the liver; and—

2. By the position of the stomach, which its elongated shape and the adhesion to the under surface of the cyst assisted it to retain.

The spleen was much enlarged, and the kidneys were healthy. The base of the right lung was collapsed.

My reason for placing on record this unusual example of hydatid cyst of the liver is to draw attention to the fact that cases will occur in which radical surgical procedures will do more harm than good in consequence of serious alterations in the shape and the positions of the viscera.

The favourite plan of treatment amongst surgeons at the present time is incision and drainage.

In this instance the removal of a portion only of the contents was sufficient to place life in immediate danger, and had incision been employed in the first instance there can be little doubt that the patient would have speedily succumbed—if, indeed, she had been so fortunate as to survive the operation.

It is interesting to note that the evidences of interference with the circulation that occurred after the first tapping were not renewed after the second; the amount removed, however, was a pint less than on the first occasion, and this was followed by oozing alongside the cannula, so that the diminution of the tumour took place very gradually. It is open to criticism whether, after the serious condition that was induced by paracentesis, any further treatment should have been attempted—at any rate until a much longer interval had elapsed.

The operator's intention was to have kept the removal of the contents under control, and whilst emptying the cyst by degrees to have been ready to take alarm at any untoward symptom due to the diminishing size of the tumour, and to have removed the cannula.

The reliance that was placed upon "transfixion of the cyst" was mistaken. Not only did the pins entirely fail in their purpose, but they gave rise to a false feeling of security, in consequence of which the cannula was retained *in situ*, and so permitted an escape of bile-stained fluid contents. This,

by finding its way in part into the peritoneum, was probably the cause of the pelvic peritonitis, and the vomiting and rise of temperature that followed were looked upon as due to changes going on in the cyst contents, and led to the incision and drainage. I would direct attention to the alteration in the character of the hydatid fluid that followed the first tapping, and I should like to ask what influence it would have had upon the cyst if no further treatment had been adopted.

I feel unable to decide the proportionate influence which (*a*) the shock of the anæsthetic and operation, (*b*) the complete emptying of the cyst, and (*c*) the pelvic peritonitis had in determining death. The peritonitis certainly seemed inadequate, and, as far as could be judged from her condition and pulse, the patient seemed to take the anæsthetic and bear the operation well.

On the other hand, it is to be remembered that the cyst had been washed out with a syphon four times before the incision was made, and therefore, though not completely emptied, no very great alteration can have been effected in its size by that operation.

XXX.—*Case of Acute Diffuse Suppurative Peritonitis successfully treated by laparotomy and drainage, but without irrigation.* By G. A. Hawkins-Ambler and R. Lawford Knaggs. *Read April* 11, 1890.

THE patient, a boy æt. 9, with clubbed fingers and a phthisical family history, but no evident disease in the chest, had complained for some weeks of griping pains in the abdomen. These he attributed to a kick by a playmate a year before in the lower part of the stomach.

On May 19, 1889, the boy was taken worse with uneasy feelings in the lower part of the abdomen, and vomited his food. The vomiting continued on the following days, and on the 22nd Mr. Hawkins-Ambler found him complaining of griping pains, the abdomen being slightly tender to pressure. He was sent to bed and ordered a rhubarb and soda mixture with a liquid diet. The symptoms seemed relieved on the 23rd, and on the 24th his grandmother treated him to a large slice of Yorkshire pudding. After this, intermittent abdominal pains came on and increased in severity.

On the morning of the 25th a small slimy motion was passed—the first, as far as could be gathered, since the 19th, —and in the afternoon he was lying in bed with knees drawn up, a pulse of 120, and temp. 101·2°.

The abdomen was tender, resonant all over, but not tympanitic. The chief complaint was of recurring attacks of pain in the stomach, which passed off and left him perfectly easy. Opium was prescribed.

On the 26th the abdomen began to swell and became tympanitic, and slight vomiting (green) returned. The bowels were not moved and no flatus passed, but the pains were easier. He was seen at 10 P.M. in consultation with Mr. Lawford Knaggs. There was then a tympanitic and much-distended abdomen. It was resonant all over and the recti were rigid. It did not move in respiration. No tumour could be felt, but palpation was painful and gave rise to peristalsis, visible through the abdominal wall, and causing the child to become restive and cry. The legs were drawn up. The tongue was moist, the lips dry, and thirst great. Pulse 120, temp. normal.

The diagnosis arrived at was peritonitis secondary to intestinal obstruction, of which the most probable cause was "matting of the intestine." To what the matting was due was uncertain, but a tubercular origin in some or other form was considered not improbable.

Mr. W. L. W. Marshall, who was present at the consultation and afterwards gave the anæsthetic, concurred in the diagnosis. It was decided to open the abdomen without delay and seek for the obstruction.

It is as well to state here the difficulties of the situation. The patient was the son of the caretaker of an uninhabited nobleman's house, situated in the heart of the country. The only water (rain water) to be got was from a cistern on the roof of the house, or from a water-butt, and both were muddy and looked as if they had been freely diluted with ink. Mr. Hawkins-Ambler's filter was sent for and found to be nearly empty, but the little that could be extracted from it was treasured up for cooling down the inky water that was boiled for intra-abdominal use. Added to this, in the hurried collection of instruments the syphon had been left behind.

With as rigid adherence to antiseptic details as was possible, the abdomen was opened in the median line by an incision three inches long between the umbilicus and pubes. The intestines were found adherent, injected, and distended, and yellow lymph was lying in a sulcus between two exposed coils.

The adhesions were easily separated, and two fingers were introduced between the intestines and the abdominal wall, with the greatest difficulty on account of the distention. Nothing could be detected at the hernial apertures, the cæcum could not be isolated, and no tumour could be felt. A little purulent fluid was seen amongst the coils. The distended small intestine was then traced, it was hoped, downwards. When about 12 inches had been passed through the fingers it was found to lead straight to the bottom of the pelvis, where it was firmly fixed. On attempting to explore with the finger the point where the bowel was attached, adhesions were felt to break down, and a gush of very fœtid, yellowish-green pus took place through the abdominal incision. The quantity was perhaps from one to two ounces.

The exploring finger continued to separate adhesions freely until it rested upon a soft patch very different from the touch of the surrounding peritoneum. This was possibly the lining membrane of the abscess. To this spot a Keith's drainage-tube was passed and allowed to remain. Another

drainage-tube was passed into the right lumbar hollow, and so great was the tension that several ounces of thin yellow pus were shot through it quite clear of the operating table. No pus was found in the left lumbar hollow.

An attempt was now made to irrigate the peritoneal cavity by pouring warm water through the drainage-tubes, but it was soon given up as futile. Indeed, so great was the intra-abdominal tension that it would have been impossible to wash out the abdomen except under considerable hydrostatic pressure, and, as we have already stated, we were without the necessary apparatus.

The wound was now closed, the drainage-tube already mentioned being fixed at the lower angle of the incision. An unusual accident occurred in passing one of the sutures. A large vein was punctured, and caused hæmorrhage, which at the moment seemed rather alarming. The suture was withdrawn, and the peritoneal aperture seized with artery forceps and ligatured. There was no further trouble.

For twenty-four hours, during which he was energetically supported by rectal injections of brandy and beef-tea, the patient suffered severely from shock, with cold surface, dry tongue, and a flickering pulse of 150. The only vomiting took place as he recovered consciousness from the anæsthetic. He then began slowly to improve, and to take as much nourishment as he was allowed.

On the third day there were three large liquid motions, and the distention and tenderness completely disappeared. The pulse still continued high (about 120), and intermittent febrile symptoms were thought possibly to depend on incomplete removal of the discharge from the pelvis. It was consequently irrigated regularly by a small tube passed to the bottom of the drainage-tube, and this at first brought away a considerable quantity of pus with some relief.

On June 7, 8, 9, he was worse, and a doughy and resonant swelling as large as a breakfast saucer appeared in the umbilical region. This gradually disappeared, but on June 10 he was very ill, with temp. 101°, pulse 140, a tense and tympanitic abdomen above the umbilicus, and complaining of bouts of pain underneath the left ribs.

On removing the dressing a quantity of thick, greenish-yellow, sour-smelling pus, different from that hitherto secreted, was found lying upon the abdomen and saturating the dressing, and on irrigation a considerable quantity escaped through the tube. The next day all the unpleasant symptoms had

disappeared; the pulse had fallen to 109, and there was a free discharge from the tube.

From this time the progress was steady and uneventful, the pulse and temperature quickly fell to normal; abdominal tenderness completely vanished; the discharge gradually diminished; the boy took food well, and soon got on to a solid diet, and the bowels acted at somewhat irregular intervals.

The tube was changed for an india-rubber one on June 15, and removed on June 22; the wound was completely healed on June 24, and the boy was allowed to be up and walk about out of doors about a week later.

The boy was nursed throughout his illness by his father, a rough but fairly intelligent country labourer.

There are one or two points in the history of this case deserving consideration, and which probably have a direct bearing upon its successful termination. Foremost among these must be placed the early recognition of the gravity and nature of the condition, and the promptitude with which it was treated.

In the present day such remarkable success has attended the practice of abdominal surgery, that there undoubtedly exists a danger lest recourse be had to surgical measures for circumstances which do not warrant such serious procedures.

From the statements of eminent surgeons and abdominal specialists, the idea has sunk deeply into the professional mind that it is impossible to diagnose accurately a considerable number of these abdominal conditions. This is a mistaken impression, and exerts a most unfortunate influence upon practice.

The analytic powers of the mind cease in consequence to be fully and clearly brought into use; the continuous effort to improve diagnosis and make each case in itself a pure and simple demonstration of real fact is hopelessly checked, and in its place there is a strong and growing tendency to set up an exploratory operation *not simply in aid,* but actually *in default,* of diagnosis. It is certainly true that the diagnostic power exists very unequally in individuals, some possessing it in a very high degree of refinement and excellence, others in very infinitesimal proportions. Just as one finds in society a few excellent chess players, but the majority very poor ones, so is diagnosis in the professional world. A few by great cultivation and natural gift possess it in a remarkable degree, and before such trained intelligence the difficulties of abdominal diagnosis would be greatly reduced and simplified.

But the many, by painstaking and accurate methods of examination and thoughtful observation of results, may do something to advance their diagnostic powers; and in no department of surgery are these more urgently needed than in the practice of abdominal surgery.

The points in this case were sufficiently clear to enable us to make the diagnosis upon which we agreed, and which rendered decisive action imperative.

The exact condition was hardly unravelled at the operation. What was the real origin of the fœtid abscess at the bottom of the pelvis must be left to conjecture. It most probably had some association with that portion of the intestine which was adherent in its vicinity and formed part of its wall. The obstruction was due to the kink in the intestine caused by the adhesions, and possibly to the pressure of the abscess, of which no evidence had been found when the rectum was examined. The diffuse peritonitis no doubt arose from leakage from the foul abscess.

Another consideration of interest was that the abdomen was not cleansed by irrigation. This is now so generally employed in these cases that but for the peculiar difficulties which beset our hurried operation it would have been certainly used. The abdomen was not washed out or cleansed; the pus, both from the general peritoneal cavity and from the abscess cavity, when opened, was expelled by the tension of the distended intestines. Not only were the hollows where the pus had accumulated not cleansed, but in those folds formed by the mesentery that were seen, there was a thin layer of pus. This was not removed by sponges, as it would have taken up time, led to much manipulation of the intestines, and must have been in the end inadequate.

The result of the case proves that the cleansing of the abdominal cavity in diffuse purulent peritonitis is not necessary to ensure success. Might it not possibly have been disadvantageous? There are some objections to the practice of washing out the abdomen. For one thing, it much prolongs the operation, and the short duration of the operation is a great factor in contributing to success. The direct influence of irrigation is depressing. A friend whose observations we can trust, and who has had considerable experience in giving anæsthetics in abdominal cases, states that on many occasions he has noticed the pulse become decidedly worse during the progress of irrigation.

It is more than probable that in some cases in which it

has been used, its influence has been to turn the scale against the patient. There is little doubt that it is often done in cases which would do just as well without it. And certainly in the present state of our knowledge irrigation or thorough cleansing would have been considered absolutely necessary to ensure a successful issue in the case narrated, but the event has proved it unnecessary.

The fluid constituents of the pus would seem to be the most harmful element. The micro-organisms propagate and flourish in the fluid, and in it the poisonous products of bacterial life accumulate. This poisonous fluid makes its way through the obstructed lymphatics and induces septic symptoms, and the less dense the fluid medium and the less the absorbing mechanism has been impaired by inflammation the more acute and intense are the symptoms.

The fluid collections in our case were evacuated by the intra-abdominal tension as soon as a means of exit was afforded, and prevented largely from reaccumulation by the drainage-tube.

Though much of the solid constituents of the pus (pus-cells) were left behind, symptoms were immediately relieved, to recur when another collection of pus formed, and to be again relieved as soon as a way was open for its discharge.

Mr. Treves originally compared suppurative peritonitis with empyema, and with abscess in a joint, and advocated the treatment of all on the same principle. Washing out is not altogether devoid of risk in empyema, and in diffuse suppurative peritonitis to thoroughly cleanse every nook and cranny, and leave the peritoneal cavity absolutely free from pus, would require a more extended and careful procedure than is always justifiable at the close of a serious operation.

It is to be remembered that the peritoneum has demonstrated both clinically and experimentally its power to absorb and destroy without harm to the body, pus or purulent effusion within it under certain conditions.*

In conclusion we would add that these remarks have reference chiefly to suppurative conditions, and are not intended to apply in their entirety to other conditions in which irrigation is thought to be indicated or successfully practised.

* "Lectures on Suppuration and Septic Diseases," by Mr. Watson Cheyne, Grawitz's experiments, *Brit. Med. Journ.*, March 10, 1888, p. 524.

XXXI.—*A case of Rheumatic Pericarditis with delirium.* By DAVID W. FINLAY, M.D. *Read April* 25, 1890.

IT has been a subject of discussion whether the delirium occurring in some cases of rheumatic pericarditis is due to the pericarditis or not—in other words, whether there is such a thing as pericarditic delirium. I submit the following instance of the complication in question as a small contribution towards the elucidation of the point referred to.

M. W., æt. 49, a female cook, came under my care in the Middlesex Hospital on December 14, 1887, with a history of acute rheumatism, which had lasted for about ten days before admission. During the attack several of the larger joints were affected; the temperature, so far as could be ascertained, did not exceed 102° F.

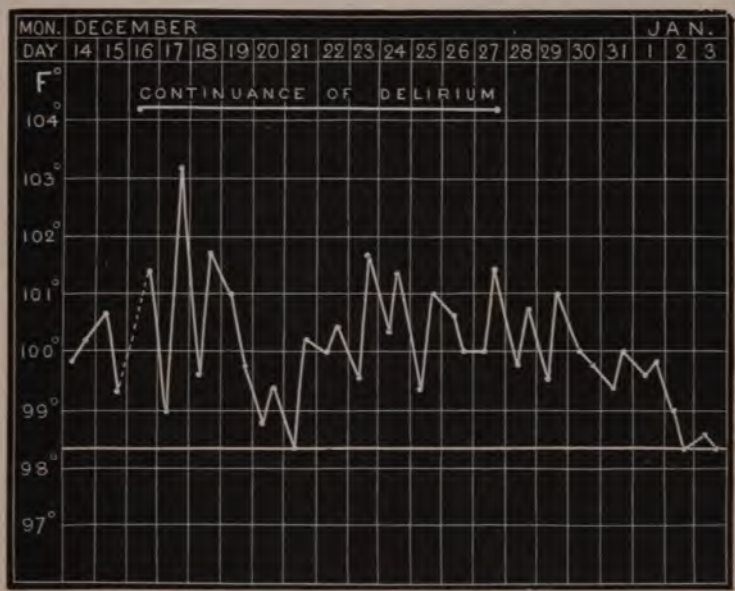
Her father, who died at the age of 62, was reported to have suffered from heart disease, and her mother to have died of "consumption and dropsy" at the age of 45. Of a family of three brothers and five sisters, five had died of consumption.

The patient herself had suffered from two previous attacks of rheumatic fever—in 1863 and 1871 respectively; otherwise she had enjoyed fair health until the occasion of the present attack. During the four days immediately preceding admission she had been treated with sodium salicylate, of which she had taken in all three quarters of an ounce.

On admission her temperature was 99·8° F.; pulse 90, compressible; resp. 40. She complained of pains in the limbs and præcordia, and shortness of breath. She was a fairly nourished, grey-haired woman, with dry skin. There was no redness or swelling of joints, but coarse to-and-fro friction was heard all over the præcordia, completely masking the sounds of the heart. The cardiac dulness did not extend above the third rib. The condition of the lungs presented no noteworthy feature, excepting some coarse muco-crepitant sounds over the backs. The abdominal organs were healthy. The urine was acid, having a specific gravity of 1030, depositing lithates, and showing a very faint trace of albumen. She was ordered fifteen grains of sodium salicylate every four

hours, the frequency of the dose being reduced the following day (December 15) to every six hours, as she had passed a good night and was free from pain.

During the next night she became delirious, this condition becoming worse towards morning; her tongue and lips were dry, and her voice a hoarse whisper. The salicylate was then omitted. On the succeeding day the delirium was less marked, and the pericardial friction not quite so loud as on admission. In the night the delirium increased, but next morning it was gone, the tongue being less dry and the appetite fairly good. She was now ordered effervescing



citrate of potash with ten minims of tincture of opium every six hours. Next morning (18th) it was noted that she had had a sleepless night, and during the day her delirium became more marked than it had been, and culminated, in the afternoon, in her jumping out of bed and knocking her fist through the window of the small ward to which she had been removed when the delirium supervened. She was then ordered twenty grains of potassium bromide with her effervescing mixture instead of the opium, and at 6.30 P.M., as

she continued violent, she had a quarter of a grain of acetate of morphine hypodermically. Soon after this she became quiet and remained so all night, but with the morning (19th) delirium returned, and she seemed to suffer some pain in the right shoulder. The condition of the heart was practically unchanged. For the next two days (20th and 21st) she was much quieter, although restless in the night and talking incoherently. This comparatively mild condition of delirium continued till December 27, when it finally disappeared. About the same time the pericardial friction also subsided, being lost at the base and but slightly marked about the apex on December 29, at which date the urine was found to be free from albumen.

Convalescence was now fairly established and she made a satisfactory recovery, and was discharged from the hospital on January 30, 1888. Ten days before that a faint systolic murmur was noted at the heart's apex, but this subsequently disappeared, leaving the first sound merely somewhat roughened. The average pulse-rate was under 100, and the highest temperature recorded 103·6°. This occurred on December 18, two days after the onset of delirium, and lasted only a few hours. The maximum temperature recorded nearest to the time at which the delirium appeared was 99·4°. The occurrence of delirium in the case made me fear the approach of hyperpyrexia, and I had the temperature taken about every two hours for several days; but this fear, happily, was not realised.

Remarks.—Before the introduction of the thermometer into clinical medicine, delirium occurring in cases of rheumatism complicated with pericarditis was attributed to the influence of this complication; but since the time referred to the tendency has rather been to regard it as due to the raised temperature. The reason of this is probably to be found in the fact that the most marked delirium is almost invariably present in hyperpyrexial cases, with which also pericarditis is more often than not associated. These points are clearly brought out in the Report of the Committee of this Society on rheumatic hyperpyrexia, dated May 26, 1882; for out of a total of sixty-seven cases tabulated by this committee delirium was present in 85·2 per cent. and pericarditis in 56 per cent. Unquestionably, however, it may be said that delirium in cases of rheumatic pericarditis, otherwise uncomplicated, is not at all common.

In order to see what statistical information I could get

upon this point from cases I had myself seen, I have looked through the Middlesex Hospital records for the three years 1887—1889 inclusive, during which I held the office of medical registrar. In those years 343 cases of rheumatic fever were admitted into the hospital, pericarditis being noted in sixty-six cases, or 19·2 per cent. Among these cases were three of hyperpyrexia, two of which were marked by delirium, the other not so.*

Seven cases presented a slight amount of delirium, which was attributed to the influence of the sodium salicylate, and two were violently delirious. The delirium in one of these was most marked when the patient's temperature was but 100·8°, and it lasted to a greater or less extent for eighteen days, during which pericardial friction was audible. It ought to be said that this case was also complicated by pleuro-pneumonia. In the other case the delirium was violent after treatment by sodium salicylate had been commenced, but it was present to some extent before this drug was given, and while the patient was taking effervescing citrate of potash. The dose of the salicylate, also, was only fifteen grains every four hours.

As regards the present case, before being entitled to conclude that the delirium was pericarditic, it is necessary to exclude certain other elements which might be thought to stand in causal relation with it. These elements are three in number:

1. *Salicylism.*—The quantity of salicylate of sodium taken was too small to have caused the delirium, the continuance of which also for eleven days after the use of the drug was discontinued is sufficient to put it out of court as a causal factor; and, further, there was no delirium before admission when the patient was taking an equal quantity during the twenty-four hours.

2. *Alcoholism.*—There was no history suggesting this, nor had the patient any appearance of it. The medical practitioner under whose care she had been before her admission to the hospital stated that she was a valued servant, and that there were no grounds for doubting her sobriety. The character of the delirium also was not like that of delirium tremens, being marked by frequent intermissions and free from tremulousness of hands and tongue.

3. *Pyrexia.*—This may, I think, also be excluded. For

* The highest temperatures recorded in these cases respectively were 105·8°, 105°, and 106°. All were treated by the cold bath, and all recovered.

sixteen hours only did the temperature exceed 103° F., the highest point recorded during this period being 103·6°. During the remaining time of pyrexia it was under 102°, the delirium continuing more or less for ten days at a temperature which did not rise to 102° F. and was often below 101° F.

I regard, therefore, the case as one in which the delirium was due to the presence of pericarditis, and the following conclusions may, I think, be fairly deduced from a consideration of the whole question.

First.—That in the majority of cases of rheumatism in which pericarditis and delirium coexist the temperature is hyperpyrexial, and the delirium may be attributed to the hyperpyrexia, inasmuch as delirium is equally found in hyperpyrexial cases in which there is no pericarditis.

Second.—That in cases of rheumatic pericarditis unaccompanied by hyperpyrexia delirium is rare.

Third.—That nevertheless it occurs occasionally in cases which are free from hyperpyrexia and other causal complications, and may in such be reasonably looked upon as determined by the pericarditis.

At the same time it must be admitted that cases are on record in which marked delirium has occurred and death taken place apparently without either high temperature or pericarditis, and this is rather a disturbing circumstance in the inquiry as to the ætiology of the delirium. If it be asked how pericarditis produces delirium, I would say much in the same way that an injury or an attack of erysipelas may produce it in an alcoholic subject. The patient being weakened by the antecedent attack of articular rheumatism, pericarditis acts by way of shock, upsetting the cerebral equilibrium.

As regards its incidence upon individuals, the personal element must be taken into account. People of a so-called nervous type may develop delirium under circumstances which would produce no such effect in those of a less excitable temperament.

XXXII.—*Case of Gastric Ulcer: symptoms of perforation: peritonitis: abscesses bursting into bowel.* By E. A. Barton. *Read April* 25, 1890.

MISS E., æt. 37, has been a chronic invalid from rheumatism since age of 24.

The history of the ulcer was this:—Four years ago she brought up a large quantity of blood with much pain in the epigastrium. From this she recovered in about a month under treatment. A year ago she had a fresh attack of pain and bleeding with vomiting, which lasted four or five weeks, and since then has had occasional attacks of pain and vomiting, lasting a day or two.

I was first called to see her on January 16, as she had vomited some dark matter, which had not been kept for inspection. There was great pain in the epigastrium, especially over a localised area just below the ensiform appendix. Some bismuth and opium were ordered and cold spoon diet. A day or two afterwards a blister was applied which relieved the pain temporarily. In this way she went on for a week, when, as she could keep no food down, rectal feeding was resorted to, and opium in grain pills allowed by the mouth every hour and a half. This was on January 23.

The following day there was intense pain in the belly, which was retracted and could not bear the weight of the bedclothes. The face was drawn and sunken, and the knees drawn up. The pulse was quick and rapid, and the temp. 97° in the mouth. Intense thirst and hiccough were present, and in short she had all the symptoms of acute peritonitis. She retched every few minutes, and brought up small quantities of glairy bile-stained fluid. Twenty minims of opium were given every four hours by rectum, and this somewhat relieved the pain and certainly diminished the vomiting.

Two days afterwards she had a rigor, but when I arrived two hours afterwards her temperature was only 99°.

On January 28 the extremities were cold, the face pinched, and the temperature only 95° in the mouth. The pulse was 108, very feeble and intermittent. She suffered intensely from thirst, and a little ice was allowed by the mouth in very small quantities. The opium was now pushed up to ♏xxv,

3tiis horis, by the rectum. She rallied, and three days after was nearly free of pain, and only vomited four or five times in the twenty-four hours.

On the evening of February 1 a most offensive smell was noticed in the room, and this was found to come from the breath, but much more from a thin ichorous discharge from the bowel. This discharge was very small in amount, being only enough just to moisten the anus. The smell was offensive beyond description. The bowel was examined without result; the vagina was also examined, and the fact that the uterus was high up and not tender went to disprove any abscess in the immediate neighbourhood. This discharge lasted two days, when a little blood was passed, and on the following day about 2 dr. of stinking pus. There was some increase of pain, and the opium was put up to ʒss 3tiis horis.

On February 5, 5 oz. of indescribably fœtid pus was passed, and the next day a larger quantity, but not quite so foul. The pus was thick and greenish, and nearly a pint was passed on February 7. She began to look better, and the opium was reduced to ♏xx 3tiis horis. As the thirst was very intense a few spoonfuls of Benger's food were permitted by the mouth. The patient had been perfectly rational up to this time, but as the opium was gradually diminished a curious form of delirium manifested itself. She became restless, sleepless, and maudlin, repeating words over and over again; she could be roused to answer questions, and then would continue murmuring in a dreamy way. This restlessness gave way to chloral in moderate doses, but the wandering lasted till February 14, that is for a week. Nearly every day some pus was passed by the bowel, usually once in the day, the quantity being about 6 oz. The nutrient enemata had been well retained between the times when pus was passed, but as each injection contained from 20 to 30 minims of opium, this may be so accounted for. She was now free from pain, and only taking 40 minims of opium in the day. As she seemed doing so well, an increase of Benger's food was allowed by the mouth up to ℥viij, the rectal injections being continued as before; but this was premature, for on the evening of that day, February 12, the pain in the belly returned with vomiting and retching, the pulse became feeble, and the face reassumed its pinched aspect. The opium was at once pushed to ♏xx 3tiis horis, and all food by mouth forbidden. She passed about 8 oz. of pus that evening, and seemed better. She quickly rallied from the relapse in three days, and only ½ oz. of pus

was passed on February 18. After that date no more pus was seen. The opium was quickly reduced, and she took none after February 20. A very small motion was passed on February 17, quite hard and colourless. From this time she began to mend, the bowels acting for the first time well and naturally on March 3, the first time for six weeks.

Rectal feeding was gradually supplemented by stomach feeding, till on March 9 all food was given by mouth, and she had no pain or unpleasant symptoms. She had been fed by rectum for six weeks, and there was very little tendency at any time to return the enemata: this was probably due to the large amount of opium in each injection.

A day or two after the last quantity of pus had been passed she suddenly brought up a large quantity of gas by the mouth so horribly offensive as to make the people in the room feel faint with the smell. This only occurred once.

Remarks.—In the case just cited there are some points of no small interest, for but few cases of peritonitis as a result of perforation of the stomach recover. It will be remembered that the rectal feeding was resorted to fully twenty-four hours before signs of perforation set in, so that at the time of perforation it is reasonable to suppose that the stomach must have been empty, and the quantity of extravasated material must have been small. To this fortunate circumstance, coupled with the fact that she was taking opium at the time, the localisation of the peritonitis was probably due. The opium was quickly pushed to drowsiness and somnolence as soon as the peritonitis was obvious.

The pus which was subsequently passed by the bowel was so little altered in appearance that it is more than probable that the abscess had burst into the colon; but the fact that she never vomited any pus goes to prove that no fistulous opening between the stomach and colon existed. On these grounds, however, I am somewhat at a loss to explain the source of the horribly offensive gas passed by the mouth on one occasion, and feel that it must have come from the interior of an abscess cavity.

Another noteworthy point in the case was the delirium which manifested itself when she was improving, with normal temperature and frequency of pulse, coincident with the decrease in the amount of opium. It is true that she was on pretty full doses, taking ʒss of the tincture every twenty-four hours, and the question arises, could it have been due to the effect of the opium as a chronic poison? I have never

seen such an effect during the discontinuance of the drug when taken only for a few weeks, but I can attribute the delirium to no other cause. Again, it has been stated that the vomiting due to peritonitis as a result of perforation of the stomach is not so violent or prolonged as that consequent on perforation of the gut. This appeared to be so in the above case, for it was only for a few hours that the vomiting could be called severe. Had the vomiting been severe, the peritonitis must have been much more extensive, as the straining of vomiting must have distributed the extravasated matter over a larger area of peritoneum.

The temperature was never seen higher than 99°, and that only on one occasion two hours after a rigor. The temperature was always taken in the mouth, and was nearly always subnormal between 95° and 98°. This is illustrative of the fact that purulent inflammation of the peritoneum may exist not only without fever, but with a subnormal temperature.

There seems to be a growing feeling in these days of advanced abdominal surgery towards opening the belly when the diagnosis of abscess in the peritoneum is certain, and this case seems to point out that under simple treatment these cases will sometimes do as well as those treated more heroically.

Since this paper was written the patient had a fresh attack of gastric symptoms in April. There was much vomiting and some hæmatemesis, but no peritonitis. Rectal feeding was at once resorted to, but as she was still very weak after the previous attack, and the vomiting continued, she gradually sank, and died on April 20. No post-mortem could be obtained.

XXXIII.—*A case of Raynaud's Disease, not associated with hæmoglobinuria, but in which there were local changes in the blood.* By WALTER S. COLMAN, M.B., and JAMES TAYLOR, M.B. *Read April* 25, 1890.

WE have recently had under observation a case of Raynaud's disease of a very mild type, in which we were able to demonstrate during the attacks the occurrence of local changes of the blood, confined to the affected fingers. The patient was first seen during the vacation as an out-patient at the National Hospital for the Paralysed and Epileptic. She was afterwards admitted into the hospital under the care of Dr. Hughlings Jackson, whom we have to thank for giving us every facility for continuing our observations, and for allowing us to make use of the notes taken while she was in the hospital.

The following is an abstract of the clinical history of the case:

Ethel L., æt. 10, a well-made, healthy-looking, intelligent girl, was admitted to the hospital on August 19, 1889, complaining of attacks in which certain of her fingers "went dead."

Her father is healthy, but her mother is extremely neurotic. Her maternal grandfather, when about 55, suffered for some years from exactly similar symptoms, also limited to the fingers of the right hand. In his case also the attacks came on quite as readily after putting his hands into hot water as into cold. There was never any pain during the attacks, and the ischæmic stage only was reached. These attacks have not occurred for some years, but he still has occasionally a feeling of cramp and subjective numbness in these fingers. (He was carefully examined by us; the hands were quite normal at the time of examination, and there was no sign or history of any other disease.) The brother of this grandfather is 75 years of age, and for the last few years is said to have had similar attacks, in the fingers of both hands, in cold weather only. We had no opportunity of examining him. Our patient is the only one of the descendants of these two men who has shown similar symptoms.

With regard to her previous history there was nothing to call for remark. The first symptoms of the disease were noted fourteen months before admission, when, without any known cause, she noticed that the distal segment of the middle finger of her right hand suddenly "went dead and white," the nail only appearing a little blue. During the following week she had several attacks, in each of which the middle finger was the first to "go dead," but immediately afterwards the condition was established successively in the ring finger, the little finger, and the index finger. One attack in this first week affected the fingers of the left hand also. From this time onwards attacks limited to the fingers of the right hand occurred with great regularity three or four times a day. She had received little benefit previously from treatment with drugs and liniments, but since she had been treated by the constant current as an out-patient the attacks had diminished in frequency and severity, and now occurred only twice a day.

Description of the attacks.—There was no premonitory symptom, nor any feeling of malaise. She used frequently to complain of pain behind the sternum, but this appeared to have no relation to the attacks. The middle finger of the right hand suddenly became blanched, and the affection then spread to the other fingers as described above. Occasionally the march of the spasm was deliberate, frequently it was extremely rapid. The ischæmic condition affected the two distal joints of the fingers only. The thumb was rarely affected. The left hand was affected as well as the right on one occasion only while she was in hospital. There was a subjective sensation of numbness, and on testing, it was found that there was great blunting of painful sensibility, and, to a less extent, of tactile sensibility. During the attacks the fingers were held semi-flexed, and she said that there was some loss of power in the hand. This was not evident on testing. The attacks lasted about five, in some cases ten, minutes. The fingers remained blanched throughout, and on no occasion became livid. As they recovered their normal condition there was a sensation of tingling, "as if they had been to sleep," but no pain.

The urine was repeatedly tested after the attacks, but no trace of blood or albumen was ever discovered by the ordinary tests. (The spectroscope was not employed.) The urine was said by her mother, in answer to a leading question, to have been unusually dark in colour on one or two occa-

sions before admission, but this did not occur while she was in hospital.

She never complained of any dimness of vision during the attacks.

There were no changes in the skin, nor any thickening around the joints.

The attacks were most frequent in the early morning, and never occurred in bed. The first usually occurred when she was washing. The temperature of the water employed did not have any effect on the occurrence or the duration of the attacks.

Destructive changes in the blood occurred, as described below.

She was treated by a daily application of the constant current, the method employed being that recommended by Dr. Barlow. One pole was placed on the neck, and the other in a basin of salt solution in which the hands were immersed. The current employed was of the greatest strength that the patient could comfortably bear, and it was frequently interrupted. She was also treated by iron internally. The treatment was continued steadily for four months, and marked improvement occurred. The attacks now occurred only four times a week, instead of several times a day, and the average duration was not one tenth of what it was on admission.

Changes in the blood.—On three occasions we were able to make a satisfactory examination of the blood drawn from the fingers during an attack. A ligature was placed loosely round a finger at a time when an attack was expected, and as soon as the ischæmic condition of the fingers was established the ligature was drawn sufficiently tight to prevent the return of blood. Before the end of the attack we made a slight incision into the insensitive finger-tip, and obtained enough blood for examination without squeezing the finger. The drop was then transferred to a slide by direct contact, and cautiously covered with a thin cover-glass. The preparation was made rapidly in order to avoid evaporation as far as possible. The specimens were at once examined with powers of 1 in., $\frac{1}{4}$ in., and $\frac{1}{8}$ in., and the following changes were observed on each occasion:—There was distinct coloration of the liquor sanguinis, the tint of the film being about half the depth of that of a healthy red blood-corpuscle. Many of the red corpuscles were shrivelled and irregular in shape, the projections being much blunter, and less regular in size and form, than the crenations seen in specimens of blood that

have been allowed to evaporate. Some of the corpuscles were nearly normal in shape, but quite colourless, while several were completely collapsed, and what appeared to be fissures could be seen in their walls. There was no increased tendency to the formation of rouleaux. The individual white corpuscles were normal, but appeared to be relatively increased in number. There was no increase of hæmatoblasts, nor were there any "blood-plates," such as have been described in cases of paroxysmal hæmoglobinuria.

To check these observations blood was taken from an unaffected finger of the left hand, and also from the lobule of the ear. These specimens were completely normal in every respect.

In consequence of the arterial spasm a very small quantity only of blood could be obtained from the affected fingers on each occasion, so that we were unable to repeat the observations of Bristowe and Copeman on the specific gravity and the actual number of corpuscles in the blood of the finger before and during the attack.

The association of paroxysmal hæmoglobinuria and Raynaud's disease has been recognised for some years past by different observers. In his Appendix to his translation of Raynaud's papers on this subject,* Dr. Thomas Barlow emphasises this close connection, quoting cases recorded by Hutchinson, Wilks, Southey, Dickinson, &c., and adds cases which he has himself observed. The association in these cases was much too close to be regarded as a mere coincidence, and there was abundant evidence to warrant the conclusion that the two affections were really two manifestations of the same morbid condition.

In these cases the attacks of local asphyxia were followed by hæmoglobinuria, and in several by jaundice, both being no doubt due to a destruction of blood-corpuscles. There was among writers a difference of opinion as to whether this change occurred in the vessels themselves, or in the internal organs, such as the spleen, liver, and kidneys. A case was recorded by Dr. A. T. Myers† in this Society's *Transactions*, which showed that these changes in part at least were peripheral. He obtained blood from the finger of a patient under the care of Dr. Cavafy, in which the phenomena of Raynaud's disease were accompanied by marked hæmoglobinuria. He described the coloration of the blood-plasma, and some crena-

* *Selected Monographs*, New Sydenham Soc., 1889.
† *Trans. Clin. Soc.*, 1883.

tion of the red blood-corpuscles, an abnormal tendency to the formation of rouleaux, and the presence of large "blood-flakes" apparently due to the breaking down of several corpuscles, the condition being exactly similar to that described by Boas* and subsequently by Bristowe and Copeman† in cases of uncomplicated hæmoglobinuria.

In our case there was never at any time, as far as we could ascertain, any hæmoglobin in the urine. The coloration of the serum was as marked as in Dr. Myers' case, and in ours there were greater changes in the red corpuscles visible. The occurrence of this hæmoglobinæmia without hæmoglobinuria is explained by the experimental observations of Hayem‡ and Ponfick,§ who injected into the veins of animals either hæmoglobin (extracted from fresh blood by distilled water) or distilled water to liberate the hæmoglobin from the living corpuscles in the vessels. They found that unless the quantity of free hæmoglobin thus introduced into the circulation was large, no hæmoglobinuria resulted. Probably in such cases and in our patient the liver, and not the kidney, deals with the free hæmoglobin, and excretes it in the form of bile-pigment.

APPENDIX.

A Case in which there were Symmetrical Trophic Changes in the Nails.

Percy L., æt. 8, an otherwise healthy boy. He is a brother of the patient with Raynaud's disease whose case is fully described above.

About eight months ago he had some injury to the right thumb, which does not seem in any way to have involved the nail, and probably had nothing to do with the subsequent changes.

Six months ago his mother noticed that the nail of the right thumb was losing the natural convexity and becoming concave from side to side, "like a spoon." A very short time later an exactly similar change was noticed in the nail of the left thumb. Soon after this alteration in shape had become established, ridges were noticed to be forming at the

* *Deutsch. Arch. f. klin. Med.*, 1883.
† *Trans. Med. Soc.*, 1889.
‡ *Progrès Medical*, 1884.
§ Quoted by Bristowe and Copeman, loc. cit.

root of both nails. These were slight at first, but as they advanced towards the free end they became deeper and more pronounced.

On examination the alteration in the shape of the nail is observed to be as described above. It is slightly concave at the root from before backwards, and markedly so from side to side. There are seven transverse ridges on each thumb-nail. Those at the proximal end are much less conspicuous than the older ones at the distal end. In addition to the transverse ridging there are some slight superficial longitudinal thickenings of the nail, and also several longitudinal cracks. The ends of the nail have lost much of their normal toughness, and fragments can easily be broken off with forceps. There is no special tenderness, and no changes in the adjoining skin.

The nails of the index fingers show one or two very slight ridges. They are not present in the nails of the other fingers, but all the nails show the brittleness of the ends and the tendency to longitudinal cracking.

We regard the change as closely allied to the phenomena of Raynaud's disease seen in the patient's sister.

XXXIV.—*A case of Tubercular Ulceration of the Bladder, in which recovery followed scraping of the disease through a supra-pubic incision after failure of other methods of treatment.* By WILLIAM HENRY BATTLE. *Read April* 25, 1890.

E. A., a girl æt. 20, single, a machinist, was admitted into the Royal Free Hospital under my care on February 8, 1889.

Her father is subject to winter cough. Her mother died of phthisis. There is no history of phthisis in the family beyond this. She was always healthy, excepting for some enlargement of the cervical glands upon catching cold, until ten months before admission, when she first noticed that she had to pass urine more frequently than usual, almost every four instead of every eight hours. There was pain, relieved by micturition. She slept well and was not disturbed at night. The urine has been thick since the beginning of the illness, and she has noticed blood in it at times; this has been equally diffused in the water. The patient has also had frontal headache and sleepiness during the day throughout the attack. The symptoms gradually increased in severity, more frequent micturition during the day, and at night she was obliged to get up. Three months before admission to the Royal Free Hospital she was under my care at Shadwell. The bladder was sounded, but nothing definite was found; various medicines were tried without improvement.

On admission to the Royal Free Hospital she was a fairly well-developed girl, but somewhat thin. She complained of frequent micturition, being obliged to pass urine every hour and a half or two hours during the day, and rise about twice during the night. There was a feeling of fulness in the hypogastrium, followed by an aching pain; she was then obliged to empty the bladder, when the pain ceased. The urine was slightly alkaline, sp. gr. 1015, containing a considerable deposit of pus, in addition to which epithelial cells could be seen under the microscope.

On examination, the lungs, heart, and other internal organs appeared to be healthy. There was no tenderness or

rigidity of muscles in the flanks. Catamenia normal. Temperature normal. No night sweats.

From February 8 to 20 there was an increase in the amount of urine collected, from 23 oz. with a sp. gr. of 1015, to 38 oz. with a sp. gr. of 1038. She took sulphate of quinine by the mouth, and was kept in bed. A trace of blood was occasionally found in the urine.

On the 20th she was examined under ether. About an ounce of urine with much pus in it was first withdrawn, and the bladder washed out with boracic acid solution. A roughened surface could be felt with the sound; the urethra was dilated, and the finger introduced. An ulcerated surface of considerable extent was felt at the base of the bladder and posteriorly, and on the right side was a sac, the bottom of which could not be felt with the finger. The ulcerated surface, which measured at least 2 inches in width by 1½ inches from above downwards, was fairly well defined by a firmer margin which was somewhat sinuous. The surface was soft and vascular, but supported on a firm base. This ulcer was rubbed with small sponges mounted on forceps, and the bladder again washed out with boracic solution.

The bladder was washed out with boracic solution twice daily until March 25, when quinine and acid solution was substituted. There was, however, very little if any improvement in the bladder symptoms, although the quantity of pus diminished. She had, however, much improved in general health, and on this date (25th) weighed 11½ lbs. more than on admission.

She was again examined under an anæsthetic on April 3, the cystoscope being employed. By this an extensive granulation surface could be seen, but it was difficult to define its limits. With the finger very little if any change from the previous condition could be felt. From the vagina the outline of the disease could be defined as an irregular ring of hardness. What could be removed from the surface of the ulcer by means of the finger-nail and Volkman's spoon was taken away or washed out afterwards; sponges were also used as on the previous occasion.

On April 6 an emulsion of iodoform (gr. x to ʒj of glycerine) was employed; ʒij were left in the bladder after it had been washed out with boracic solution.

She left the hospital on April 18, having gained weight since admission to the extent of 14½ lbs.

The patient was readmitted to the hospital on June 25,

not having improved since she left, the treatment having been imperfectly carried out.

Micturition took place every hour or hour and a half, and she had to get up about four times during the night. The other symptoms were also not improved. She was losing flesh and had night sweats. The general condition was fairly good, and there appeared less induration about the base of the ulcer when examined from the vagina. The urine was acid, sp. gr. 1012.

On July 1 Landerer's preparation of balsam of Peru was used as an injection twice a day (Balsam of Peru and Mucil. Acac. āā, Ol. Amygdalæ q. s., Sodæ Chlor. 0·7; Aq. destill. 100·0; five or ten drops are to be poured into a porcelain capsule, and a 0·7 per cent. solution of Sodæ Chlor., filtered and made alkaline by a drop of caustic soda, is added drop by drop till the emulsion is feebly alkaline, the yellow-green emulsion taking a green tint; it is then strained through linen). This injection caused pain, and she was unable to retain it long, even with a previous injection of a 5 per cent. solution of cocaine.

July 13.—No apparent improvement. Balsam of Peru with equal parts of oil substituted for Landerer's solution.

July 29.—Progress being unsatisfactory, supra-pubic cystotomy was performed in the usual way. A rectal bag did not aid much in the operation. The bladder wall was incised between silk threads, and the sides held apart with these. Duck-bill specula were afterwards found most satisfactory as retractors. The ulcerated surface was extensive, spreading over the left lateral and posterior wall, from the trigone almost to the summit with the bladder relaxed. The margin was less defined than had been expected from the previous examinations, but the mucous membrane was puckered towards the diseased patch, evidently from cicatricial contraction after partial healing. An attempt was made to bring this nearer the wound by pressure through the anterior vaginal wall under its base, but it was too much bound down. The sac of which mention has been made as situated on the right side was about the size of a walnut, and covered with healthy mucous membrane. After scraping of the surface of the ulcer it was dabbed over with a solution of chloride of zinc (30 grs. ad ℥j). A self-retaining catheter was placed in the bladder, and a drainage-tube through the lower part of the wound, a silk suture being placed in the upper part. Antiseptic dressings with iodoform were employed.

The drainage-tube was removed on August 3, and the increased discharge which had followed the operation was diminishing. On the 5th no fluid came through the wound on irrigation of the bladder. On the 10th the catheter was removed, and frequent irrigation practised. She could not hold urine for more than twenty minutes, and complained of soreness on micturition.

On September 4 she had been up for five days; she retained urine for more than an hour, and the proportion of pus was much less than before the operation.

The wound was healed on the 8th, and on the 20th, when she was discharged, there was a very slight sediment of pus in the urine. There was no pain or discomfort before micturition, and she could retain urine for nearly three hours. Further improvement has followed.

Examination of the granulation tissue removed at the operation showed caseous degeneration of tubercular deposit, but no bacilli or giant-cells were found, nor could any be discovered in the urine, though this was examined on more than one occasion during the progress of the case. Although the urine was alkaline to a slight extent when the patient was admitted, it soon became acid and retained that reaction.

I saw the patient on the 8th of this month; she expressed herself as being in good health, and she looked it. Since leaving the hospital she had done her work and put on flesh. Could hold her urine for three hours at a time, suffered no pain nor inconvenience from it. She could not hold urine for *longer* than three hours, and considering the diminution in size of the bladder that must have followed the cicatrisation and contraction of such a large surface as that involved in the disease, this is not a matter of surprise to me.

It is possible that in the case, the notes of which I have read, it was my good chance to find a tubercular lesion having its only seat in the bladder, not having spread to it from other parts, but having commenced in the mucous membrane of that organ as a primary deposit. I hope that it is so, that the patient will prove ultimately to have fully recovered from the disease; and I am the more inclined to take a favorable view from the continuing improvement which has followed the operation.

Primary tubercular disease of the bladder is a rare condition, the deposit in that part being usually secondary to tubercle of the kidneys, and invading the bladder in the close neighbourhood of the ureters. Without an exploration of the

bladder it was impossible to say what the symptoms indicated, there being no one symptom of very great prominence, and no history leading to any evidence as to the cause of the symptoms. They resemble very much those met with in some early forms of renal tuberculosis, and at the time the patient was under treatment I explored the bladder of a girl, æt. 16, with almost identical signs of local trouble, but nothing could be discovered in any way abnormal, nor could the kidneys be felt to be enlarged even under anæsthetic. I have very little doubt that patient was the subject of early renal disease due to tubercle.

The operation of supra-pubic cystotomy has been rarely resorted to for the direct treatment of tubercular deposit in the bladder, but success has been obtained by Guyon, who records three cases, and Reverdin, who records one. I know of no published case in this country. I do not propose to narrate their cases, although they are of very great interest. In all the distress caused by the bladder symptoms was extreme, the patients were males, and in all tubercle bacilli were found in the urine. In my patient the symptoms of cystitis persisted in spite of general treatment and local applications; this led to exploration of the bladder, and the attempt to improve the ulceration which was found, by scraping through the urethra and rubbing the surface with dry sponges. This and further local and general treatment did not cause any improvement in the bladder symptoms, though the girl grew fat and increased in strength. Under these circumstances, and considering the lapse of time, it seemed justifiable to proceed further, before there was any evidence of tubercular deposit elsewhere. I knew that there was a definite local lesion of sufficient extent to account for the symptoms from which she suffered, and it seemed advisable to attack it directly.

I can recall more than one instance of cystitis, probably tubercular, which would have been benefited by some form of incision into the bladder, either through the perinæum or over the pubes; whether it might have been practicable to deal with them successfully so far as regards active treatment of the disease it is not possible to say.

The successes recorded by Guyon and Reverdin were obtained in three cases (two of them by the former) after free scraping away of the disease and the application of the thermo-cautery to the scraped surfaces. I preferred a strong solution of chloride of zinc as an application after the scraping. The surface was so unusually large that subsequent slough-

ing was feared from the use of the cautery, and I have obtained good results from chloride of zinc in the treatment of tubercular lesions of other parts of the body. Some of the solution escaped to the surrounding mucous membrane, and caused a temporary inflammation of it.

As much benefit has been derived from this operation in at least one case where there was marked tubercle of other organs, I would not restrict its performance to cases such as mine, where no evidence of tubercular disease existed in other parts, but would advocate it when the distress caused by frequent and painful micturition was severe. Even though there might be no prospect of cure, the relief obtained would prove justification for its performance. Then, again, in cases of obstinate cystitis with the presence of bacilli in the urine, exploration of the bladder should be undertaken early if there is no evidence of renal disease, and any local disease removed, if possible, in a thorough manner. It will be interesting to hear the experience of other members of the Society on the results of treatment in these cases. Landerer claims success in a case of tubercular cystitis treated with the preparation of balsam of Peru which I tried without satisfaction, but it should be remembered that the ulcer showed signs of healing at the operation, but whether in consequence of earlier measures or from this preparation I cannot say.

XXXV.—*Case of Disease of the Middle Ear, in which symptoms suggesting cerebral abscess were completely relieved by treatment of the ear trouble.* By HARRINGTON SAINSBURY, M.D., and W. H. BATTLE. *Read May* 9, 1890.

GEORGE P., æt. 30, single, labourer, admitted June 26, 1889, into the Royal Free Hospital.

Family history.—Nothing bearing on the case.

Personal history.—Strong and healthy all his life. In army from 1878 till 1885–6; served in Malta, Cyprus, Egypt—in last place during the recent war. Whilst in Egypt was subject to bad headaches; these were worse at night. It was subsequently ascertained from the patient that he had been in hospital in Egypt with head symptoms (pain), for which he had been blistered. No history of syphilis.

Statement obtained from the patient.—On the 10th of June he suffered from prolonged exposure to the sun during a drive; he dropped off to sleep during the journey; on awakening he felt giddy and dazed. Since then he has suffered from severe and constant headache passing from occiput over vertex to forehead, and the pain has increased of late. He has felt stupid and drowsy, and several times has been on the verge of unconsciousness, but has not slept. He has felt very giddy. For the four days before his admission there has been frequent vomiting; the bowels, however, have acted regularly. He has noticed of late that his sight has been blurred and dim.

From the landlady it was learned that on the day of the drive, June 10, he had been unconscious in the evening, and on several other occasions; that he had since been strange in his manner, that the vomiting above mentioned had been frequent.

Report of the present state on admission.—Patient lies on his back with legs extended, the face is flushed, the eyes fixed, the expression vacant. The eyeballs rotate upwards occasionally, showing only the whites; the pupils are equal, moderately contracted; they react slowly to light and to ac-

commodation. On the lips and right side of the mouth there are patches of herpes. The patient is very restless. He answers questions fairly readily and distinctly, but seems to have a difficulty in recalling things to mind, and the effort increases the pain in the head. Now and again he shows an inclination, when roused, to be noisy, and puts his hand to his head. He complains, when questioned, of gnawing pain in the head as described above, of pain at the back of the eyeballs, increased by light; also of pain along the spine down to the loins, and that it hurts him to bend his back. He suffers from giddiness. He says he has not slept for a fortnight. The temperature is raised, 99·6°—101°; the pulse 64, full, rather incompressible; the breathing 20, full; the tongue red at the tip, furred at the dorsum.

On examination the patient was found to have perfect control over his limbs. The superficial reflexes, plantar and abdominal, were present, the knee-jerks were absent; there was no clonus. The optic discs showed doubtful blurring of the margins; the vessels were distinctly tortuous, the veins dark and full.

The examination of the abdomen was negative; that of the chest gave some impairment of note at the bases behind.

For the next three weeks the patient remained very much in the same state as on admission. The pain in the neck and head, especially the back of head, was tolerably constant, and with the heaviness or drowsiness formed the most obvious symptoms. There were, however, occasional remissions in the degree of pain. Stiffness in the neck was at times complained of. Some inequality of the pupils developed, the right being rather larger than the left, but this was not a fixed quantity, and throughout the pupils reacted to light and accommodation. On one or two occasions the patient said he saw double. On July 12 the discs were distinctly blurred, and on the 17th there was well-marked double optic neuritis of about equal intensity on the two sides. There was a hæmorrhage at the edge of the right disc. Throughout there was pyrexia of a very irregular type; it was for the most part intermittent, the maximal temperatures ranging between 101° and 102°.

Vomiting was not a feature in the patient's complaint after his admission. On the 18th of July the house physician, Dr. Evans, ascertained that the patient had been deaf of the left ear since a child, and that he had had discharge from this ear. It was then found that with the left ear he was almost completely deaf, being even unable to hear through the bone.

On examination with the speculum the deeper parts of the ear were found to be moistened with a fœtid purulent discharge, and what appeared to be a pale juicy granulation tissue filled up the far end of the meatus.

Mr. Battle was then asked to examine the patient, and his report was that there was a polypus with broad base growing from the posterior wall of the middle ear, and projecting into the external meatus. It was thereupon decided that the patient should be operated on, and, as a preliminary, that the mastoid process should be trephined and all diseased tissues scraped away. This was done on the 27th of July.

Before describing the operation it may be well to state that the patient's condition had proved wholly intractable under the following treatment:—Ice-bag to the head, free opening of bowels, antipyrine, in the first instance; subsequently blistering behind the ear and in the nape of the neck and bromide of potassium with iodide of potassium, the latter in increasing dose, viz. up to ʒss pro dosi—thrice daily. Mercury was added to the mixture on July 26, but in view of the absence of results so far it was resolved to delay no further.

On July 26 Mr. Battle examined the ear, and found what appeared to be a granulation polypus growing from the middle ear, the base of which could not be defined with a probe. There was no tenderness over the mastoid, nor any evidence of inflammation of that process. The optic neuritis was very intense. He answered questions slowly but correctly, and complained of pain in the head not localised to the neighbourhood of the ear. There was an offensive smell but little discharge.

July 27.—Next day the external meatus was so much swollen that it was impossible to see the granulations beyond. It was not found possible to pass wire snare beyond the swelling of meatus so as to remove any growth, and a probe passed to the middle ear showed presence of gritty material in the surface of the bone. A Volkmann's spoon was then introduced, and the granulation growth with some foul-smelling caseous material scraped away. The meatus was washed out, and it was found that a bent probe passed readily into the mastoid cells through a large opening. The mastoid process was then exposed by the usual incision and the periosteum elevated. The bone was then trephined in a position corresponding to the point of the probe, and the circle of bone elevated. The bone was hard. This opening

was enlarged with the chisel, and the cavity thus exposed. Examined, it was filled with a thick, greyish, pultaceous, stinking material, and was of large size. It extended nearly to the tip of the process, and upwards for an inch above the level of the middle of the external auditory meatus. Bounded in every direction by bone, excepting in front, where it communicated with the middle ear by a large opening, it was lined by a thin membrane, and presented no trace of other cavities. A large amount of the pultaceous material was removed with the spoon, and the cavity then washed clean with perchloride solution, any softened portion of bone being scraped away. The ear and abscess cavity were then swabbed out with chloride of zinc solution (40 grs. ad ℥j), washed again with perchloride solution, a drainage-tube passed from the cavity into the ear and out through the meatus. Iodoform was freely used, and sal alembroth gauze applied.

The tube was kept in position until the 21st of August, and the ear syringed daily with perchloride solution. It was difficult, however, to prevent a fœtid odour. This syringing with the use of iodoform powder to the meatus and the wound was continued until the external wound was closed.

On the day following the operation the temperature had fallen to normal; it remained so thenceforward. The occipital pain became much less, and soon disappeared entirely, though for a long time there was pain referred to the left ear and left side of the head. The patient had good nights.

Two or three days after the operation some loss of power on the left side of the face appeared; on the sixth day the whole of the left half of the face was partially paralysed. This weakness then gradually subsided, and finally disappeared before he left the hospital on September 14.

On August 9, thirteen days after the operation, the optic neuritis appeared to be subsiding, the vessels centrally being more visible. A week later the subsidence was undoubted. A week later the discs when seen by Mr. Mackinlay showed only slight optic neuritis. A hæmorrhage outside the disc which had been very prominent had now disappeared. Four days later the choroidal margin was visible on the outer side of either disc. Vision when tested on August 31 gave Snellen No. 1 read at 14″ with some difficulty.

On September 14 the patient was discharged; there was a slight secretion from the wound, for which the patient was to attend as an out-patient.

There is one condition which remains to be referred to;

for the sake of clearness it has been so far omitted. On admission the patient was found to have some impairment of note at the bases behind; this was most marked on the left side, and here crepitations were heard. Accompanying these signs, which at no time were very pronounced, there was slight cough and a moderate spitting, the sputa being blood-stained. On the day before the operation there is a note that the sputa are mucoid and stained with bright blood, and about one ounce in quantity (in twenty-four hours).

After the operation, cough, as a symptom, ceased, and there is no further record of any hæmoptysis.

The case is recorded for two purposes; the first has reference to diagnosis, the second to treatment.

Here was a man who during his service as soldier had suffered from exposure to heat, who whilst in Egypt had been the subject of bad headaches, and had even been in hospital on one occasion with head symptoms. This man, in whom the syphilitic taint was likely in spite of a negative history, developes, after exposure to heat, an attack of intense headache with vomiting; he is heavy, even drowsy at times. An optic congestion then appears and subsequently passes into a condition of intense papillitis. There is a certain amount of irregular fever. What was the diagnosis? In the early stage, before the optic neuritis had become well marked, the patient was supposed to be suffering from heat-stroke.

It is true the rather vague physical signs at the bases of the lungs, with the patch of herpes on the lips, did not fit in very well with this diagnosis; and yet, on the other hand, it was not possible to regard the case as one of pneumonia with cerebral symptoms.

On the development of the optic neuritis in a pronounced form the diagnosis of gross intracranial mischief was made, and in the absence of clear evidence as to its nature the patient was put on antisyphilitic treatment, potassium iodide being given up to gr. xxx three times a day. It was during this treatment that somewhat accidentally the patient's deafness of the left ear was discovered, and that on examination the condition described above was found. The irregular temperature ought to have suggested, at an early stage, the possibility of intracranial suppuration and to have called for a thorough search for cranial bone disease; but it must be remembered that the lung symptoms and signs present might in part have accounted for the pyrexia which obtained.

With the discovery of ear disease the diagnosis of cerebral

abscess was definitely made; so sure of this, in fact, did we feel that the operation of clearing away the diseased parts around the ear was done only as a preliminary to the opening of the cranium.

The subsequent course of events makes it certain, we think, that there was no such suppuration inside the skull; in evidence we have the immediate fall of the temperature, and the lessening and gradual disappearance of the head symptoms, most important among these being the subsidence of the optic neuritis. So far then as it goes this case establishes the statement that disease of the bones of the ear may cause a double optic neuritis of great intensity. It is on this point that we should be glad to have the opinion of the Society, and we lay stress on the fact of the intensity of the neuritis.

Mr. Barker, in his most interesting lectures at the College of Surgeons on "Intracranial inflammations starting in the temporal bone," has drawn attention to the occurrence of optic neuritis in middle ear disease, and he discusses the mode of production of such neuritis. Without attempting to consider this subject at length, we would point out the difficulty which a double optic neuritis of equal intensity presents to any explanation of the phenomenon by a local spreading—as, for instance, by lymphatics.

The relation of optic neuritis to gross intracranial mischief remains very obscure; the present case may perhaps help to throw some light on this relation by establishing another factor in its causation. Meanwhile we would only insist that ear disease may simulate gross disease within the cranium in respect of the optic neuritis produced.

It need hardly be said that the inference here drawn is a clinical one. The absence of any residuum of symptoms has led us to conclude the absence of any pathological residuum. In so doing we are not forgetful of the latency of many intracranial lesions and in particular of cerebral abscess.

To one other point we would draw attention, viz. to the hæmoptysis present during the period before the operation, and which did not recur after it. The most reasonable explanation of this appears to be the occurrence of partial clotting in the lateral sinus, with the occasional detachment of the clot and its arrest in the lung. To such involvement of the lateral sinus in ear disease Mr. Barker makes reference in the lectures above quoted.

As to treatment, the point we would raise is that in all cases of ear disease with head symptoms sufficiently grave to

call for operative interference, and including even a severe optic neuritis, the patient should not be subjected to the major operation of craniotomy till the minor operation of clearing away all extracranial disease has been performed, and a certain time has been allowed to elapse, in order that symptoms due to this extracranial disease should have had the opportunity for subsiding.

XXXVI.—*Cases of Optic Neuritis associated with purulent inflammation in the neighbourhood of the lateral sinus.* By Arthur E. Barker. *Read May* 9, 1890.

THE object of the following notes is to draw attention to the occasional association of optic neuritis with certain inflammatory conditions of the temporal bone starting in catarrh of the middle ear. It has fallen to my lot to see a great deal of disease in this region, and from facts before me I am inclined to think that, if looked for, optic neuritis would be found in many cases of severe inflammation of the temporal bone in which clinically there is no evidence of any proper intracranial disease. If this should turn out to be the case, a fresh difficulty arises in explaining the ætiology of this remarkable condition of the eye by any of the current hypotheses. But at the same time if it be a fact, it is certain some time or another to assist us in the solution of the problem.

Whether the two cases now to be related, in which optic neuritis was undoubtedly present, ran their course without any trace of intracranial disease properly so called, it is impossible to say positively, inasmuch as both of them recovered; but so far as the clinical evidence went, there was nothing during the whole course of the affection from which they suffered to indicate the presence of either meningitis or cerebral abscess. In another case, too, in which optic neuritis was discovered in the eye department, and which was brought to me, no cause for the condition could be found except a very stubborn inflammation of both middle ears. But though such cases are very significant, and should, I think, be looked out for, still it is quite certain that a very large majority of cases of severe mischief about the middle ear and mastoid process run their course to recovery or death without any evidence of optic neuritis. For a long time past I have been in the habit of examining the eye in nearly every case of severe middle ear disease which has come under my care, but though I must thus have examined many scores of cases, I have only seen the optic condition in the three referred to, together with one already recorded in which I operated on a temporo-sphenoidal abscess with recovery.

I have already suggested a possible explanation of the optic papillitis occurring in such cases, presumably unassociated with any lesion of the encephalon proper,* and need not further allude to it now, but simply record the cases briefly. We want a good deal more material before we shall be able to generalise safely. In the meantime every recorded case may help to stimulate observation in this field.

CASE 1.—Alice B., æt. 14, was admitted August 11, 1886, into University College Hospital. Her family and personal history were good. She had had measles in 1882. Ever since infancy there had been a discharge from both middle ears and frequent earache. For a couple of months before admission this earache had been severe, and during the last fortnight there had been much swelling over the right mastoid process and above the auricle. This swelling on admission was found to be very tender and to fluctuate. Both ears at this time discharged freely. The patient was heavy and listless. The temperature was subnormal, ranging between 97° and 98°. There was marked optic neuritis.

The case being evidently urgent, I operated at once on the mastoid process, which was already carious, and perforated at a point about half an inch above and half an inch behind the centre of the meatus of the ear. This carious perforation led into the mastoid antrum, and nothing remained for me to do but enlarge it somewhat, and to scrape away the diseased bone and granulations wherever found, so as to establish a free outlet for inflammatory products from the middle ear. The whole area of operation was then thoroughly washed out with carbolic solution, powdered with iodoform, and covered with a boracic fomentation.

The next day the patient appeared better, but the temperature remained subnormal all day, 97° to 98°. On the 13th there was pain over the temporal region, but no sickness, and the bowels were open. On injection, fluid did not pass freely between the meatus and the mastoid opening. The temperature was higher, ranging from 97·8° to 101·6°, but the headache was gone. From this date until the 20th the patient's condition was very critical. She was very feeble, had diarrhœa, was heavy and listless, and the temperature varied daily between 97° and 104°. From the 20th to the 27th she had ʒss of Warburgh's tincture three times daily, with perhaps some benefit as to temperature, which was a

* *Hunterian Lectures*, 1889.

little lower and steadier. On the 28th it was discontinued. From this on there was steady improvement in every way, but still, until the patient was discharged from hospital on September 23, there was irregularity of temperature.

The ear and mastoid antrum all through her stay in hospital were regularly syringed out with boracic lotion, and the posterior opening was kept patent with a leaden drain-tube until long after she went home. For several months she continued to attend as an out-patient, and was observed rapidly to regain flesh and spirits. At the end of three months the optic neuritis had nearly disappeared, and though there was still an opening into the mastoid antrum there was little or no discharge. All trace of head troubles had disappeared at this time, and she appeared well and cheerful though rather deaf.

Case 2.—Albert D., æt. 8, was admitted into University College Hospital on September 16, 1886. He had been always delicate, and had had scarlet fever two years before, since which there had been a discharge from the right ear, for which he had been treated at various hospitals. About a fortnight before admission he got very hot, and to cool himself went paddling about in a pond without his shoes and stockings. For the next few days his ear was very painful, and was poulticed.

On admission on September 16 I found the boy very heavy, dull, and feverish. Temp. 104·2°. The whole right mastoid region was intensely tender and moderately swollen, but there was no perceptible fluctuation. There was but little discharge from the ear, although I found a large opening in the membrana tympani. This was blocked by thick white cholesteatomatous material, which also filled the middle ear.

I at once cut down upon the mastoid process, and found just a trace of pus under the periosteum. The bone was much sclerosed and thickened, and the antrum was only reached after considerable gouging. When a little bone had been removed pus began to ooze through the pores of the tissue, and when the antrum was reached it rushed out with considerable force and in large quantity. I then laid bare the posterior aspect of the mastoid process and the emissary vein, and found that from the foramen through which the latter runs a stream of pus escaped, evidently under considerable pressure. This of course came from the sulcus lateralis within the skull. Here, too, the bone was chiselled away until the pus ran out

freely from around the lateral sinus. A syringe, fitting the meatus closely, now forced out a quantity of thick white cholesteatomatous material from the mastoid opening. When the whole cavity had thus been cleansed with carbolic solution the wounds were dusted with iodoform and covered with boracic fomentations. After the operation rapid improvement took place. The temperature fell from 104·2° to 99° in twenty-four hours, and afterwards usually ranged from 98·4° to 100°; twice it fell to 98°. In other ways he was soon quite well, except for a tendency to constipation. About the third week after operation his eyes were examined, and slight optic neuritis was found on the right side, the left optic disc being normal. About this time he drew attention to total blindness of the left eye, the vision of which on examination was found to be quite gone. Both pupils were always much dilated but equally so, and were normal in their reactions.

As the optic neuritis, although increasing, was not accompanied by any symptoms of other intracranial mischief, the boy was made an out-patient on October 20. After this he attended regularly to have the metal drain-tube in the mastoid opening well washed out and readjusted. He appeared to be in excellent health, but for a time the optic neuritis became more and more intense on the right side; indeed, Dr. Gowers, to whom I showed the patient at this time, remarked that he had never seen it more acutely marked. He completely recovered the sight of the left eye, in which the optic papillitis was always more moderate.

Of course it is impossible to prove that this child had not some cerebral or meningeal lesion; but from what was seen of him there was nothing to lead to suspicion in this direction except the condition of the eyes. He was watched for several months after leaving hospital, and when lost sight of was apparently quite well. It is well known of course that cerebral abscess may remain latent for a long time, but in this very bright boy there were none of the ordinary symptoms of the condition. And although it is conceivable that a localised meningitis may have been present and have been recovered from, there was no headache, dulness, twitching, or fever at the time that the optic trouble was at its height to point to this affection.

If it should be proved hereafter by post-mortem evidence that the presence of purulent inflammation in the sulcus lateralis (which certainly existed in the last of these two

cases and probably in the first) is capable of producing optic neuritis in the absence of meningitis or cerebritis, we shall have secured a very valuable diagnostic symptom for a class of affections upon which, at the present time, it is often difficult to come to a conclusion. But such cases will require a much more general and closer study than they have hitherto received before this point can be cleared up. Such results, however, as the foregoing will encourage us to resort to early surgical interference with more confidence of success than has hitherto been felt in dealing with this class of affection.

XXXVII.—*Thrombosis of the Longitudinal Sinus following fracture of the vault of the skull.* By W. Arbuthnot Lane. *Read May* 9, 1890.

P. W. D., a healthy-looking boy æt. 2½, was admitted into Guy's Hospital under my care on the afternoon of December 28, 1889.

At half-past six in the morning the father slipped while carrying the child downstairs, and fell some distance. He fell upon the boy, whose head struck against the sharp edge of a bannister, producing a lacerated wound of the back of the scalp. Through this a depressed fracture could be felt, and some brain tissue was seen in the wound. He was quite conscious. Temp. 102°, pulse 128, resp. 82.

The child being under an anæsthetic, a triangular portion of the parietal bone was found to be depressed. Part of it was removed and part elevated, and the wound was thoroughly washed out with 1 in 20 carbolic lotion.

Some difficulty was experienced in stopping hæmorrhage from one of the superior cerebral veins, but this was finally ligatured at its entry into the longitudinal sinus. An oval opening into the parietal bone, 1⅛ inch long, was left extending from ⅛ inch outside the coronal suture outwards along and above the lambdoid suture.

A small drainage-tube was inserted, and the edges of the wound were brought accurately together.

The longitudinal sinus was not exposed at the time of the operation, nor did the depressed bone or any portion of the fracture come into immediate relation with it.

On December 29 the wound was dressed and the drainage-tube was removed. It looked perfectly healthy. The child had slept but little since the operation, though it looked very well.

In the morning the temperature was 99·2°, pulse 144, and the respirations 24, while in the evening the temperature was 98°.

On December 30 the child was still very restless. The wound was again dressed, and was progressing most favorably. Late in the day he had convulsive movements which were limited at first to the left side of his body, then to the

right side, and then they became more or less general. After these attacks the child lay very quiet, hardly moving at all, and then only when moved. Neither during this day nor subsequently was there any vomiting or optic neuritis, nor did he cry out as if he was in pain.

On December 31 the child appeared to be quite unable to move his arms or legs voluntarily. He was conscious during the greater part of the day, but towards evening he became very drowsy, and then lapsed into a comatose condition from which he never recovered, dying at 12.15 the same night. In the morning his temperature was 97·8°, pulse 168, and respirations 17.

I feared that a thrombus had developed in the superior longitudinal sinus about the orifice of the ligatured superior cerebral vein, that it had extended forwards along the sinus and backwards to or beyond its junction with the lateral sinuses, and that the symptoms which the child presented were consequent upon such interference with the flow of the venous blood from the brain as had resulted from it. The absence of any choking of either optic disc showed that the thrombus had not extended from the lateral sinus into the petrosal and cavernous sinuses sufficiently to interfere with the retinal circulation. There did not appear to me to be any evidence of meningitis.

At the post-mortem examination the longitudinal sinus was found to be completely thrombosed, the oldest part of the clot, as indicated by its firmness and white colour, being situated at the vertex. It extended forwards beyond that point for an inch and a half, and backwards to the site of fracture. The portion of the clot in the vicinity of the fracture was black. It filled the vessel completely, and was apparently ante-mortem in character.

The thrombus extended from the longitudinal sinus at the vertex into a large superior cerebral vein for ¾ inch on either side. There was much congestion of the superior cerebral veins. There was no injury to the longitudinal sinus, nor was there any reason to suppose the wound was other than perfectly aseptic.

The brain was normal except about the fracture, where there was bruising and laceration of the grey matter of portions of the precuneus, cuneus, first occipital convolution, and the posterior limit of the superior parietal lobule. There was some bruising of the inferior surface of the cerebellum, where the inner borders of the slender and posterior

inferior lobes are in contact with the medulla. The other organs were all healthy. Though the diagnosis of thrombosis of the longitudinal sinus was correct, there was no reason to suppose that it had originated in the manner suggested; while, on the contrary, it appeared to be spontaneous in origin.

I was certainly not prepared to find the thrombosis limited to the longitudinal sinus alone, and my chief object in bringing this case before the notice of the Society is because I wish to obtain further evidence as to whether a comparatively sudden and complete occlusion of the superior cerebral sinus *alone* is sufficient to produce the train of symptoms and the fatal termination which ensued.

It seems to me rational to suppose that any comparatively sudden and complete obstruction to the escape of the venous blood from a large area of the surface of the brain should produce very definite symptoms indicating interference with the normal performance of its function by that portion of the cortex involved similar to those presented by this case.

Judging from a case published in the last number of the Society's Transactions,* complete occlusion of one lateral sinus associated with a thrombosis of the petrosal and cavernous sinuses sufficiently complete to produce very extensive choking of both optic discs causes no obvious permanent interference with the functions of the brain.

Whether occlusion of the superior longitudinal sinus does or does not necessarily produce the symptoms presented by this case can readily be determined by ligaturing it experimentally in one of the lower animals.

* "Five Complicated Cases of Middle Ear Disease."

XXXVIII.—*A Case of Epithelioma of the Rectum: excision: restoration of function.* By A. T. Norton. *Read May* 9, 1890.

E. S., who was admitted on December 5, 1889, states that she was confined on May 24, 1887; that soon afterwards she felt pain in the vagina, which has more or less persisted till the present time. About two months ago she consulted Dr. Parrott, who diagnosed the case to be cancer of the rectum.

She passes a motion often, as frequently as a dozen times a day, fæces being flattened and in small pieces, and accompanied with bleeding.

On examining the rectum I found an ulcerated growth occupying the front and sides of the rectum, but not the posterior part. It extended upwards as high as the body of the uterus, and pressed the vaginal wall forward like a tumour in the vagina, though the mucous membrane of that part was not infiltrated with the growth. It was decided, after consultation with the rest of the surgical staff, to remove it.

On the 17th December, ether having been administered, the patient was placed in the lithotomy position. A central incision was then made in the whole length of the posterior wall of the vagina, which was perfectly free from the tumour though stretched over it; the recto-vaginal pouch of the peritoneum was sought for and pushed upwards out of the way; the incision was next carried backwards along the central line of the perinæum, and made to diverge on each side of the sphincter ani. At first it was intended to save part of the sphincter and part of the rectum, but it was found impossible to do so; the rectum was therefore separated from the levator ani and the tissues surrounding it, and the écraseur was applied above the level of the tumour, the peritoneum being carefully avoided. The bowel above was, by means of the finger, freed so as to allow of being drawn easily down to the skin of the buttock. Bleeding, which was somewhat free, was controlled by forceps and by sponges. The upper part of the bowel was easily drawn and affixed by several sutures to the skin in the position of the former anus, and the rest of the chasm was approximated by deep sutures of silkworm gut, two or three small sutures being applied to the divided

mucous membrane of the vagina. Iodoform was dusted over the part after freely washing out the wound with perchloride of mercury solution 1 in 1000, and the part was dressed with the cyanide gauze.

On the following day, 18th December, the pulse was 120, but the temperature normal.

On the 19th pulse was 100. Milk diet only was administered for the whole week. Patient was quite cheerful, slept well, and was entirely free from pain.

The deep sutures were removed on the fourth day, when all the wound seemed healed with the exception of a slight separation, about one sixth of an inch, of the bowel from the skin.

The temperature was never above the normal. Union had been by the first intention, there being only a slight amount of granulation tissue at junction of bowel and skin, which, when cicatrised, formed an anus about one inch in length.

On the tenth day the bowels were opened. The patient walked about the ward, and on the 18th January was discharged with complete power to retain her motions, and without any possibility of further contraction of the anus taking place.

A microscopical examination of the growth proved it to be a cylindrical epithelioma.

It has been said that in removal of the bowel, a portion of the peritoneum may, if necessary, be removed with it. The cases on which I have operated have shown me that such is a matter of little importance if union by the first intention takes place, but still I feel less anxiety after finding the peritoneum and raising it away from the site of the operation.

I would lay particular stress on the necessity of firmly fixing the new end of the bowel to the skin. Any retraction of the bowel must leave a mass of cicatricial tissue, the contraction of which brings about a most serious trouble. With regard to the loss of the sphincter allowing of the spontaneous escape of fæces, I do not find such to be the case, except when the patient is suffering from diarrhœa.

More than a year ago I had a case almost precisely similar to the one I have just described, which I reported in the *Medical Press and Circular* (June 12th, 1889, p. 617).

The patient wrote to the sister of the ward a few days ago to say that she was in good health, able to perform her duties, and not seriously inconvenienced by the altered condition of the parts.

XXXIX.—*Hydatids in the Pelvis causing retention of urine: operation: cure.* By F. R. Fairbank, M.D. *Read May* 23, 1890.

THE occurrence of retention of urine from the presence of a hydatid tumour between the bladder and the rectum is of sufficient rarity to appear to justify the record of such a case. I have kept the notes by me until I had an opportunity of adding the subsequent history. I have now, after a lapse of ten years, had an opportunity of completing the record.

Previous history.—On July 5, 1879, I was requested by the late Mr. R. Storrs, of Doncaster, to see a man, æt. 65, with himself and Mr. D. Tracy. About a fortnight previously he had suffered from difficulty in passing his urine, but got relief from some medicine. The day before I saw him he had another retention, and drove in, a distance of four miles, to see Mr. Storrs, who, with some difficulty, drew off a considerable quantity of urine. The following morning he again applied for relief, and as Mr. Storrs was unable to get a catheter into the bladder, I was requested to see him.

On examination the abdomen was visibly distended by the bladder to such an extent that relief was urgently called for. *Per rectum* the pelvis was felt to be occupied by a fluctuating tumour, apparently the bladder. A catheter could not be passed, and I therefore decided to tap. I thrust a trocar into the bladder *per rectum,* when about 4 oz. of an opaline fluid ran away. It was obvious that this did not come from the bladder, but from a cyst between it and the rectum. The pelvis was now felt to be less fully occupied. I was now able to pass a No. 8 catheter, and drew off about a quart of dark-coloured urine. The contrast between the two fluids, which I collected in separate vessels, was very great. The patient was put to bed, and I ordered him hip-baths, in which he was able to pass water easily.

Subsequent history.—Ten days afterwards I was again requested to see him, as there was considerable diffuse inflammation about the pelvis, and the urine had been overflowing for three days. I emptied the bladder with a catheter, and ordered local fomentations; and ergot, ammonia, and Tinct. Cinchonæ Comp. internally. The next day he could pass urine

unaided, and he made a rapid recovery. At this time the cyst in the pelvis could be felt *per rectum*, when pressed against the catheter in the bladder, to be about the size of an ordinary orange, and to be partially collapsed.

In addition to the cyst above spoken of there was also another, which could be seen projecting in the left iliac region, about the size of a Tangerine orange. This I aspirated, and drew off an ounce of fluid exactly similar to that from the cyst under the bladder. It was opaline in appearance; it became opaque with heat, but cleared on the addition of nitric acid; it did not coagulate, and under the microscope numerous detached hooklets were visible.

Six months afterwards his wife brought me "some skins," as she called them, which he had passed with his water. They were four perfect hydatid cysts about the size of ordinary walnuts, and were partially collapsed. They were said to be only part of what he had passed. The fluid they contained was similar to that above described.

Present condition.—I have now, after a lapse of ten years, seen him again. On examination there is nothing peculiar about him. There is no sign of the cyst in the left iliac region, and there is nothing to indicate the previous existence of the cyst under the bladder; and the prostate even now, at seventy-five years of age, is not enlarged. There is no trouble in passing water. He speaks, from very imperfect recollection, of having had, years ago, a small round tumour in the region of the liver. This disappeared, and it is possible, and probable, that it was the same cyst which found its way down into the pelvis.

Bibliography.—The following are a few references on the subject:

Holmes's *System of Surgery*, 2nd edit., iv, 938; v, 922.

Fagge's *Principles and Practice of Medicine*, 1st edit., ii, 324.

Spence's *Lectures on Surgery*, 2nd edit., vol. ii, 1131–2.

Clinical Memoirs on Abdominal Tumours, R. Bright, New Syd. Soc., pp. 39, 40.

New Syd. Soc. *Retrospect*, 1865–6, p. 320.—From Mr. Bryant's paper in *Path. Soc. Trans.*

Cognate to it is a "Case of Hydatid Disease affecting the Kidneys (Cysts passed *per urethram*)," by Dr. Leith Adams, *Lancet*, October 1, 1864, p. 375.

XL.—*A Case of Thyroid Tumour, apparently malignant, which all but disappeared after tracheotomy: renewed growth in an undoubtedly sarcomatous form.* By G. R. Turner. *Read May* 23, 1890.

CATHERINE P., æt. 62, widow, was admitted into St. George's Hospital, September 5, 1888. She stated that for six months she had noticed a lump in front of her neck which had been growing steadily. For three days before admission she had suffered from dyspnœa, severe and spasmodic in character on the night of September 4.

On admission she complained of great dyspnœa and was somewhat cyanosed. There was a large tumour evidently implicating the thyroid gland extending laterally from the posterior border of the right sterno-mastoid muscle to the left of the median line, and above from the angle of the jaw to the clavicle below. The swelling was hard, not elastic or fluctuating, and the dyspnœa was evidently caused by its pressure on the trachea. There was no pulsation or exophthalmos.

She had an apical systolic murmur, and the breath-sounds were very faint. There was no trace of any thoracic tumour. Urine sp. gr. 1024, highly albuminous.

The patient was placed in a steam tent, and by means of the inhalation of chloroform her dyspnœa was markedly allayed. She was seen by Dr. Gamgee, Mr. Bennett, and Mr. Turner about midnight, and it was decided to delay the tracheotomy, if possible, until daylight. Throughout the night the dyspnœa was relieved by chloroform and the inhalation of oxygen gas.

At 5.30 A.M. tracheotomy was performed. In doing this the tumour was thoroughly exposed from the thyroid cartilage above to the episternal notch below. It occupied chiefly the right lobe of the thyroid body, and had pushed the trachea, which lay very deep, over to the left side. The tumour had extended so low down that it was with some difficulty that the trachea was reached below it, and the incision into it was so far from the skin surface that no tracheotomy tube was long enough to enter. A No. 12 gum catheter was accordingly used as a tube, and through this the woman breathed freely.

The patient after the operation was comatose, and remained so for some hours, but after a drachm of Pulv. Jalapæ Co. she recovered consciousness. The after progress of the case while she was in St. George's may be shortly related.

The albuminuria rapidly decreased, so that whilst on admission it was equal to one half of the quantity of urine passed, on September 17 there was but a trace, and on September 19 it had disappeared entirely. The catheter tube came out on the 15th, and Mr. Dent, who kindly looked after the case in Mr. Turner's absence, did not think it advisable to re-introduce it. There was no excessive discharge from the wound, and nothing that looked as if a cyst had been opened. The wound healed, the patient breathed freely and easily by the mouth, and the thyroid tumour had by September 28, three weeks after the operation, all but disappeared. There was then nothing abnormal to be felt in the neck but a few enlarged cervical glands.

Though there was no history of syphilis the patient was placed upon 10-grain doses of potassium iodide, and was sent on October 3 to the Convalescent Hospital at Wimbledon. She was there for a fortnight, being discharged on October 17, apparently quite well except for a very trifling enlargement of the upper part of the right lobe of the thyroid body. She was in this condition when she reported herself as an out-patient at St. George's. The neck was all but natural in appearance, except that the skin was loose and had evidently been stretched. At the upper part of the thyroid body on the right side was a hardish nodule, occupying apparently about the upper third of the lobe. This swelling had rapidly grown when she next presented herself, and she was urged to become an in-patient. It was not, however, until a week later that she came into the hospital. The tumour by this time occupied the whole of the right lobe of the thyroid body, and was causing some slight dyspnœa and difficulty of deglutition. At a consultation it was decided to cut down on the tumour, and if possible remove it. On November 8 chloroform was given, and by dividing the right sterno-mastoid muscle the tumour was exposed, but its relations to the carotid vessels and other deep structures of the neck were found to be such as to forbid removal. The capsule was freely incised, and a portion of the growth removed for microscopical examination. Dr. Delépine reported the growth to be a "sarcoma, having in some places the structure of a lympho-sarcoma. No trace of structure belonging to the thyroid body can be discovered."

The exploratory operation gave considerable relief to the dyspnœa and dysphagia, and for a few days it seemed as if the tumour itself was getting smaller. By the 16th, however, the dyspnœa had returned and tracheotomy was performed. There was a mass of new growth in front of the trachea which had to be removed before a tube could be inserted. The patient was relieved by the operation, but only for a time. The malignant mass around the trachea began to break down and discharge very foul-smelling matter, almost fæcal in its odour. In consequence of this disintegration the thyroid tumour diminished again in size. Owing to the difficulty in deglutition feeding by the rectum was necessary, but the patient's strength grew less, and she died on December 15.

Post-mortem examination showed the right sterno-mastoid muscle infiltrated by a pale firm new growth, unduly adherent to the skin and adjacent structures. Each lobe of the thyroid gland, which was little if at all enlarged, consisted of a homogeneous mass of new growth looking like a sarcoma. This was examined microscopically by Dr. Penrose, and was "seen to consist of small round and oval cells, being evidently a small-celled sarcoma." The new growth in front involved the mucous membrane in the middle line between the cricoid cartilage and first ring of the trachea, and infiltrated the edges of the last tracheotomy wound, which had passed through the second, third, and fourth rings. Below this, through the seventh, eighth, and ninth rings, was the scar of the original tracheotomy. The lower end of this wound was but 2¾ inches from the point of bifurcation of the trachea. No secondary deposits of new growth were found anywhere away from the neighbourhood of the thyroid body. The cervical glands were not infiltrated. There was hypostatic pneumonia on the left side. The heart was soft and flabby, and atheroma present in the aorta and cerebral vessels. The liver was fatty, and the gall-bladder contained a small stone. The weight of the kidneys was 12 oz., and there was cloudy swelling in the cortex of each. There were two small cysts in that of the left.

The chief interest of this case lies in the rapid shrinking of the tumour after the first tracheotomy. This operation interfered in no way with the blood supply, no vessel requiring ligature, did not involve division of the isthmus of the thyroid, and differed only from an ordinary tracheotomy in that the incision was extensive, freely dividing the deep cervical fascia, so as to expose the whole extent of the

thyroid tumour, and that the trachea was opened very low down indeed. What, then, was the nature of the primary swelling?

From the age of the patient, the rapid growth, hardness, and general appearance of the tumour, it was, both before and after the tracheotomy, diagnosed to be malignant. It had none of the appearances of a cystic nor the bluish-red aspect of an ordinarily enlarged thyroid. There was no evidence of any syphilis. It is true that the patient was put upon a course of potassium iodide, but that was not until the tumour had already shrunk, and the drug therefore cannot be credited with the improvement.

On the two occasions during life in which the tumour was exposed, at the first tracheotomy and again when an exploratory operation, with a view to the removal of the tumour, was undertaken, the naked-eye appearances and consistence of the swelling were identical. Microscopical examination of a part removed on the second occasion showed the growth to be undoubtedly sarcomatous; was it of this nature *ab initio?*

That sarcomata do sometimes decrease in size or even disappear seems tolerably certain. Bruns (*Monatsch. für Prakt. Derm.*, vol. viii, No. 4), in an article on "The Curative Effect of Erysipelas on Tumours," mentions three cases of sarcomata (in which the diagnosis was verified by microscopical examination) which were permanently cured by an attack of idiopathic erysipelas. Other cases of multiple keloid and lymphomata similarly cured are also mentioned by him, and certain cases of mammary carcinomata benefited by an artificially induced erysipelas.*

Billroth (*Wiener med. Wochensch.*, No. 20, 1888) has written on "Scirrhus of the Thyroid resembling the Cicatrising Scirrhus of the Breast," and discusses the point as to whether the morbid growth be a true new growth or a chronic inflammation. In one of Billroth's cases the cervical glands were affected, and the growth at one time caused constriction of the trachea and œsophagus.

* 22 *tumours* attacked by idiopathic erysipelas:
- 3 sarcomata—permanently cured.
- 2 multiple keloid, after burns—permanently cured.
- 4 lymphomata—some glands disappeared, others became smaller.

5 *tumours* treated by artificially induced erysipelas:
- 3 mammary carcinoma { 1 not changed. / 1 shrank to half its former size. / 1 reduced to small induration, the size of a pea.
- 1 multiple fibro-sarcoma—diminished in size.
- 1 orbital sarcoma—unchanged.

Is it possible that the very rapid disintegration of the sarcomatous cells, as seen in the specimen examined by Dr. Delépine, on the first occasion went on to the all but complete removal of the growth? There is no doubt at all that at the post-mortem examination the thyroid gland, occupied as it was with sarcomatous matter, was very much smaller than when, equally malignant, it was seen and a piece of it removed at the exploratory operation of November 8.

If not a simple sarcoma in the beginning, the tumour may have been a cystic sarcoma in which the cystic element largely preponderated, and the cystic contents being absorbed after the tracheotomy, the tumour all but disappeared.

Again, it is possible that extravasation of blood into a sarcomatous tumour might cause rapid swelling, and with the absorption of the blood a rapid shrinkage might follow.

Against these hypotheses there is the fact that neither during life nor after death was there any evidence of cystic formation in the tumour or hæmorrhage, either into it or around it. It must, however, be admitted that in tumours of the thyroid the negative diagnosis of a cyst is a difficult and uncertain matter. I cannot think, seeing there was no general œdema and no appearance of local œdema about the tumour, that the albuminuria and its decrease after the tracheotomy had anything to do with the varying size and shrinkage of the thyroid swelling. Assuming, for the sake of argument, that this tumour was originally innocent, some cystic or parenchymatous goitre, its shrinkage and subsidence must have been simultaneous with its conversion to malignancy. That malignant disease of the thyroid usually occurs in glands already the seat of innocent enlargement is a surgical commonplace, but not, I think, in this manner.

Dr. Rotter (*Arch. f. Clin. Chir.*, Bd. xxx, Heft 4), analysing fifty cases of "cancer" of the thyroid submitted to operation, shows that eight died in twenty-four hours, five died at the end of first week, eight died at end of second week, and that only four were free from recurrence at the end of six months. Mr. Butlin comes to the conclusion that "operation is scarcely justified" in these cases.

Looking to these statistics, I do not regret having been unable to attempt to remove the thyroid in the case I have related. By making a free division of the cervical fascia and sterno-mastoid in the exploratory operation of November 8, marked relief was given to dysphagia and dyspnœa. In some cases where non-malignant enlargements of the thyroid

of huge size and great vascularity render tracheotomy an exceedingly difficult and dangerous proceeding, might not the surgeon try, as a palliative and preliminary measure, to in this way relieve the tension and pressure which eventually threaten to prove fatal?

Mr. Jacobson, in his "Operations of Surgery," gives a case of Dr. Dewe's (*Brit. Med. Journal*, 1879, January 18, p. 84) in which a large bronchocele, by its pressure, threatened suffocation. A free median incision gave relief, and the tumour decreased in size until the seventh day, when it again enlarged and caused death; the posterior part of the tumour having broken down, the resulting venous extravasation pressed on the respiratory nerve. "The only part of the trachea at all approachable was under the manubrium sterni, where it was covered by the innominate artery."

In this latter respect the case resembles the one related—the pulsation of the innominate artery being, in my case, felt immediately below the incision into the trachea, which subsequent post-mortem examination showed to have divided the seventh, eighth, and ninth rings but 2¾ inches from the point of bifurcation.

Report on microscopic examination.—Fresh specimen (stained with logwood) shows tumour to be a round-celled sarcoma, infiltrating neighbouring fatty tissue. Some rapidly disintegrating cells do not take the staining well, are ill-defined in outline, and granular. In some places there is a distinct retiform stroma.

In the hardened specimens (stained with logwood and picro-carmine) the degeneration of the cells is more clearly shown, there being distinct patches of necrosis in which the cells are entirely hyaline.

XLI.—*A case of Urethral Stricture four years after electrolysis: encysted vesical calculi: three operations by lithotrity and three by supra-pubic lithotomy, one of which was performed through the peritoneum.* By W. Bruce Clarke. *Read May* 23, 1890.

H. H., æt. 57, first came under my care in January, 1886, suffering from symptoms of cystitis with frequency of micturition, and stating that he had a stricture which had given him considerable trouble for more than twenty years. The frequency of micturition had lasted from six weeks to two months.

January 3, 1886.—His stricture was examined, and was found to be situated in the deep urethra. It admitted a No. 2 English black catheter. The stricture felt very hard, and was in addition gritty. He gave a history of having passed some gravel from time to time.

His stricture was dilated to No. 5 with considerable difficulty, and would not yield any further until No. 5 had been tied in for several days. It was not till February 17 that the stricture was dilated to No. 9 English. No. 10 bougie electrode was then employed, and passed into the bladder in ten minutes. Shortly after this he left the hospital, his cystitis having all but vanished, and a few days later had a second sitting with No. 12 bougie electrode, which lasted a little over a quarter of an hour.

August 17, 1887.—He again came under my care, as the cystitis had returned. On examining his urethra a No. 11 English passed with ease into his bladder, though he had not been keeping his stricture dilated by the passage of bougies. His bladder was thoroughly washed out and sounded, but no calculus was detected; he still passed gravel occasionally.

August 24.—It was decided that if no calculus could be detected, perinæal drainage should be established with a view to the cure of his cystitis. Whilst he was under the influence of an anæsthetic a sound with a curve almost resembling that of a silver catheter struck a calculus to the right side of his bladder close by the apex. It was speedily ascertained that the calculus was fixed in its position, as it could not be shifted

by a change of the patient's position, or dislodged by means of the sound. It was almost out of reach of the lithotrite, which would only seize one part of it, and was incapable of moving it from its situation.

Under these circumstances the supra-pubic operation was at once decided on, and after a rectal bag had been inserted was performed without any difficulty.

As soon as the bladder was opened and the finger introduced, the stone was discovered lying in a sacculus on the back and upper wall towards the right side. It was dislodged with the finger without much difficulty from the sacculus, but some few fragments remained behind firmly fixed *in situ*, and a little difficulty was experienced in dislodging them. Eventually, however, all the fragments were cleared, and a large rubber supra-pubic tube inserted. The rest of the bladder was very rugose, and other saccules could be detected with the finger.

The patient made an excellent recovery, leaving the hospital about six weeks after the operation, passing all his water through his penis; but at times it was slightly alkaline, and gave rise to some frequency of micturition.

April, 1888.—He again returned, complaining of frequency of micturition and scalding on passing his water, which was foul and alkaline, and contained some phosphatic gravel and calculi. His bladder was carefully sounded, but the calculous matter did not appear to be situated on this occasion in the same sacculus as before, but lay nearer to the base of the bladder. In order to elucidate the exact condition of the interior of the bladder an examination was made with the cystoscope, and the calculous matter lying at its base was detected. It was difficult to see the interior of the bladder thoroughly on account of the thick condition of the urine, but it appeared as though there was another saccule containing a calculus.

As the encysted calculus could not be for certain detected, it was decided first to evacuate the débris which lay at the base of the bladder, and see how far this relieved his symptoms. A lithotrite was introduced, and after the calculous matter had been crushed, upwards of an ounce was washed out, and nothing further could be felt in the bladder.

He improved very much after this, but some more débris was broken up by the lithotrite on two subsequent occasions before he left the hospital at the end of June in the same year.

In January, 1889, he again returned, with urine foul and

alkaline, and containing a considerable quantity of albumen and pus, whilst the bladder would not hold more than two ounces of urine without considerable pain. It was washed out twice daily with a solution of Boroglyceride ʒj, Argent. Nit. ʒss, water Oj, and the character of the urine again temporarily improved. As, however, no permanent improvement took place, and as the condition of the bladder rendered it impossible to evacuate it by lithotrity, the supra-pubic operation was once more performed on March 1, 1889.

As soon as the abdominal muscles were separated in the line of the old cicatrix, it at once became apparent that the peritoneum was adherent to the cellular tissue behind the pubes, as well as to the pubes itself, and could not be raised up from it; accordingly the peritoneal cavity was opened, and the bladder wall was stitched to the edges of the wound in a somewhat similar manner to that which is adopted in performing inguinal colotomy. The wound was then stuffed with iodoform gauze in order to prevent its edges from uniting, and the patient was put back to bed. For the next ten days his bladder was regularly washed out, and he appeared to be but little worse for the supra-incision which he had undergone.

March 16.—A grooved needle was passed through the bottom of the wound into the bladder, and its wall was incised so as to permit of the introduction of the finger. Three small calculi facetted on their surfaces where they were in contact were removed from the base of the bladder, together with a considerable amount of débris. The old sacculus could be distinctly felt empty, and lined apparently by healthy mucous membrane, but immediately below it and nearer to the base of the bladder was another encysted calculus, which came away from its resting-place without any difficulty.

After this he rapidly improved, and was soon able to get up, furnished with a tube and vulcanite shield, which he wore for some time in order to enable his bladder to be effectually washed out daily. By this plan he was enabled to hold his water for some hours, and to keep his bladder fairly sweet and clean.

About six months later, having allowed his supra-pubic wound to close up, his bladder troubles again returned, and on December 7, 1889, he came back once more. This time, however, he was not in so bad a condition as on previous occasions. His urine, though still foul and alkaline, was not so offensive as it had been. The bladder was still much con-

tracted, and contained some more calculous matter. As his previous operation had been attended with considerable success, I decided once more to open his bladder, and the suprapubic operation was performed for the third time, through the old cicatrix, no peritoneal cavity being encountered at all on this occasion.

Since the operation his bladder has been regularly washed out twice daily with nitric acid as well as with various antiseptics, after which about two ounces of nitrate of silver solution, gr. xxx ad ℥j, are introduced and allowed to remain there. Under this plan of treatment he is certainly much improved, and the improvement continues. He is now able to occasionally sleep all night without once waking to void his urine, and with perseverance in the treatment there is every reason to hope that he may completely regain his power of natural micturition.

XLII.—*Cases illustrating the treatment of Phthisis by the inhalation of superheated air.* By H. H. Taylor. *Read May* 23, 1890.

THE brief notes on this method of treating phthisis, which I have the honour of presenting to this Society, are purely clinical in character. I do not propose to enter into the bacillary nature of phthisis; nor into the theories as to how hot air would act in destroying the tubercle bacillus, or in mitigating its virulence. I may say that I use the term "phthisis" as synonymous with pulmonary tuberculosis. It is necessary to be extremely cautious in drawing conclusions as to the effect of any special treatment on this disease. At the Brompton Hospital for Consumption the majority of cases improve, owing, I believe, principally to well-ventilated wards, good food, and regular hours.

The apparatus employed for heating the air is one made by Mr. R. Macdonald, of New York. It is conveniently constructed, and acted efficiently.

The temperature at which the air entered the mouth was, as near as could be calculated, about 300° F. The patients inhaled for about an hour, two or three times a day. The inhalations were very well tolerated. A sensation of heat was felt in the mouth and throat, but not sufficient to cause any inconvenience. Temperature, pulse, and respirations were carefully noted after each sitting. The only effect on these appeared to be that occasionally the pulse was very slightly accelerated, the temperature and respirations remaining unaffected. The skin did not appear to be more active.

The patients sometimes said the cough was easier, but the amount of expectoration did not diminish. There was no evidence that the treatment was in any way prejudicial. The four cases I will now describe were males.

Case 1.—T. F., æt. 30. No family history of phthisis. His illness commenced with cough six months previous to admission. No hæmoptysis. Some emaciation.

General disease of left lung, with a large basic cavity. Right lung emphysematous. Temperature ranged from 98° in

the morning to 101°—102° at night. Sputum: Tubercle bacilli numerous.

He was doing well before the treatment was commenced, having gained six pounds in a fortnight. He was chosen on account of his being an intelligent patient, and he faithfully carried out instructions. He had 143 sittings.

When discharged the physical signs were practically the same as on admission. The cough was less; tubercle bacilli in sputum much fewer; gained seven pounds.

Case 2.—A. C., æt. 16. One brother died of phthisis. Pleurisy three years ago. Commenced five months ago with cough. Expectoration profuse. No hæmoptysis. Some emaciation.

Right lung: Disease diffused; cavity at apex. Left lung: infiltration at apex.

Sputum: Tubercle bacilli numerous; much fewer when discharged. Temperature ranged from 98° to 101° and 102°.

Treatment was commenced soon after admission. Had ninety-six sittings. Physical signs remained much the same. Expectoration less profuse. Gained eleven pounds.

Case 3.—A. F., æt. 36. Mother and one brother died of phthisis. Bad cold and hoarseness for four years. No hæmoptysis. Emaciation. Lungs: Expiration prolonged all over. No adventitious sounds. Signs masked by laryngeal stridor. Larynx: Epiglottis swollen and granular-looking. Swelling over both arytænoid cartilages. Both ventricular bands swollen, hiding true vocal cords except just anteriorly, where they appear swollen. Temperature ranged from 98° to 102°.

Expectoration scanty; contained a few tubercle bacilli. Had forty-five sittings.

When discharged the physical signs of chest remained obscured. Larynx: Right aryepiglottic fold extensively ulcerated. Also the left, but not so much. Mucous membrane over arytænoids much swollen. The ventricular bands very irregular and enormously swollen, quite hiding the cords. The whole of an ashy-grey colour. Disease had decidedly advanced.

Case 4.—A. M., æt. 39. No family history of phthisis. Commenced two years ago. No hæmoptysis. Some emaciation. Right lung: Dulness with harsh breathing, and crepitations to fourth rib. Left side: Same signs but less marked.

Epiglottis a mere ulcerated stump.

Mucous membrane over both arytænoid cartilages swollen, especially the left. Right vocal cord: Movements imperfect. Temp. 98°—101°. Remained unchanged. Nine sittings.

He got worse. Lost three pounds, and could not be induced to continue the inhalations.

It is impossible to form any opinion as to the effect of this treatment from these four cases. The first patient was doing well before it was commenced, and continued to improve. The second case, although he gained weight, made no marked progress. In the third the laryngeal disease most decidedly advanced, and that rather rapidly. The fourth was a bad case, and the patient would not persist in the treatment long enough.

However, about this time two cases occurred in the hospital which, I think, enabled us to form a very good idea of how far this method of treatment was likely to be beneficial. There was a patient under the care of Dr. Mitchell Bruce with well-marked bronchiectatic excavation of the base of the left lung. Mr. Godlee had successfully tapped it after removing a piece of rib. On illuminating the interior of the cavity two openings could be distinctly seen, and a probe could be passed up them, and appeared to reach somewhere near the trachea, and caused coughing. Air passed very freely in and out of the cavity. When the patient inhaled peppermint it could be smelt at the wound, and when it was blown through the opening he almost instantaneously tasted it. This showed that there was a very free communication between the mouth and the cavity. Inspection of the lung, which was removed after death, clearly shows how very free this communication was. This patient was set to inhale hot air, which he did at about a temperature of 300° F. A thermometer was placed free in the cavity, and carefully plugged in. At the end of one hour the thermometer only rose one degree. The patient thought it was a form of treatment which suited him, so we had no difficulty in repeating this experiment several times, and always with the same result.

Another case soon occurred which gave us further opportunities of trying experiments. A patient was admitted under the care of Dr. Tatham, also with a cavity at the base of the left lung. Its exact nature was never determined, as he fortunately made a complete recovery. It was tapped by Mr. Godlee after resecting a piece of rib. In this case also there was a free communication with the mouth, but not quite so free as in the preceding case, as he did not taste the pepper-

mint quite so instantaneously. A probe could be passed up towards the trachea, which he said he felt, and it caused much coughing. The same experiments were repeated on him, but in his case the thermometer never rose at all.

I think that these experiments show what most of us would have expected, viz. that the temperature of superheated air is rapidly dissipated in the mouth, pharynx, and larger air-tubes. These structures are extremely vascular, and the rapidity with which the blood circulates appears quite able to carry off any superfluous heat, and reduce the air to the normal temperature of the blood before it reaches the smaller bronchi and pulmonary tissue.* It follows, then, that the inhalation of superheated air can have no influence over the course of phthisis.

* Dr. Ernst Schowald, of Jena, has recently made some experiments on dogs to test this point, and the conclusions he arrived at are the same as my own.

LIVING SPECIMENS

DESCRIBED BY CARD.

*** Published in accordance with the Regulation relating to the exhibition of living specimens at the meetings of the Society, viz. that "each case shall be accompanied by a card containing a brief description of the points it illustrates, such card to be retained by the Secretary for publication or not in the *Transactions* at the discretion of the Council."

I.—*A case of Myxœdema in a young subject.* By JOHN ABERCROMBIE, M.D. *Exhibited November* 8, 1889.

THE patient, Annie B., is now æt. 15, and her present ailment is said to date from the time when she was between eight and nine years old. At this period she lost her father, to which her mother ascribes her illness. Up to this date she was a bright, intelligent child, quick at her lessons, and was considered pretty. The mother cannot give any definite account of the symptoms at the commencement of the illness; she says the child was more or less laid up for three years, and the doctor told her that the kidneys were affected (unfortunately this doctor has been dead some years). Nothing was ever noticed, especially as to her throat, during the primary illness or subsequently. The mother has found that the child has much gone back in mental power, and that though much older she does not know nearly so much as she did before her illness; her memory has become very bad, and she is getting, according to the mother's statement, more and more apathetic. There has also been a marked change in her personal appearance; her hair, from being soft and silky, has become coarse, and her skin has also become rough and harsh; her features and complexion have also undergone great alterations. Her bowels are generally costive, and she suffers much from cold.

The catamenia have not been established. Patient is the first child, and was born at the full time; the labour was tedious, but instruments were not used. She was late in teething and walking, but up to the commencement of this illness was considered an exceptionally fine child both mentally and physically: she has hardly grown at all since this illness. There is one other child, younger and healthy in all respects. The mother is healthy; she has had no miscarriages. The father died of phthisis, aged thirty-one.

Patient is a squat, thick-set child, measuring 47½ in. in height; she is pale with a somewhat muddy complexion, and broad bridge to her nose; the lips are rather thick, anæmic, and dusky; the tongue is not big, and there are no fat masses in her neck; the rings of the trachea can be plainly felt in front; the thyroid is not palpable. Her hair is sparse and coarse. The heart's sounds are natural; the liver and spleen cannot be felt, but the abdomen is somewhat large and tumid. The skin is everywhere harsh and dry; the hands are square, spade-like, with short fingers, and are generally blue and cold; the feet are also short and cold. She is quiet and easily contented, but though dull she is by no means imbecile, and can perfectly understand all that is said to her. The knee-jerks are active. Urine generally of low specific gravity, sometimes containing a trace of albumen.

II.—*A case of Excision of the head and neck of the Humerus for myeloid sarcoma.* By C. Macnamara. *Exhibited November* 8, 1889.

F. P., æt. 22, a powerful, healthy young fellow, consulted me in September, 1888, on account of an extremely painful condition of his left shoulder. The patient stated that since August, 1887, his shoulder without any definite cause had gradually enlarged, producing intense pain in the limb. I found that the head of the left humerus was occupied by a tumour which had rapidly increased in size during the two months previously to the patient's first visit to me; his suffering at this time was so great that he was prepared to lose his arm rather than endure the pain any longer. The tumour was of cartilaginous hardness except at one spot where fluctuation could be felt; a trocar and cannula having

been thrust into this portion of the tumour, about half an ounce of bloody fluid flowed outwards.

In September, 1888, I made an incision from above downwards through the soft tissues into the tumour, so as to enable me, after dividing the attachments of muscles, to extrude the upper extremity of the humerus through the wound. The bone was then sawn through about 1½ in. below the lesser tuberosity, but as the remaining cancellous tissue was unhealthy at the line of section a portion of it was gouged away. The arm and forearm after the operation were at once fixed to the thorax by means of a plaster-of-Paris bandage.

The wound healed without suppuration, and the patient has now a useful arm and hand. There has been no recurrence of the disease either in the affected part or anywhere else in the body, the patient at present being in perfect health.

On examining the tumour, which was as large as a good-sized orange, it was found to consist of a growth of myeloid sarcoma in the cancellous tissue of the head and neck of the humerus. In one part the sarcoma had degenerated so as to form a cavity. The articular cartilage of the humerus and of the glenoid cavity was healthy, the morbid growth not having extended through the periosteum or the articular cartilage of the upper end of the humerus.

P.S.—There has been no return of disease up to date (July, 1890). The patient has good movement of the arm, and can do a hard day's work with it.

III.—*Disseminated Myositis and Neuritis, probably of alcoholic origin, unilateral (hemiplegic) in distribution, accompanied by terminal gangrene (Raynaud's?) and by pigmentation of the skin, and followed by muscular atrophy.* By H. HANDFORD, M.D. *Exhibited November* 8, 1889.

THE patient who is the subject of this affection was exhibited to the Society on the evening of November 8, 1889. He had been under my observation at intervals as an out-patient for several years. The progress of the case since the above date has been very carefully watched, and is recorded up to May, 1890.

Although instances of peripheral neuritis, mostly followed by muscular atrophy, of all degrees of severity, and of very variable origin (alcoholic, puerperal, febrile, traumatic, &c.), have been tolerably numerous in the Nottingham General Hospital duting the past few years, I have never before met with a muscular induration in the least resembling that to be described in the present case. The further progress of the affection since the patient was shown to the Society has only served more completely to dispel the idea that the induration was of the nature of a gumma. The evidence of syphilis is very slight, and dates back thirty-seven years. The induration never assumed the form of a nodule, but the normal contour of the muscle was always preserved. It was always free and not adherent to adjacent structures. The tissue removed from the centre of the induration was not that of a gumma. The induration was uninfluenced by antisyphilitic remedies. The indurations in the deltoid, pectoralis major, and vastus externus were in all probability of the same nature as that in the biceps, namely, the results of a myositis.

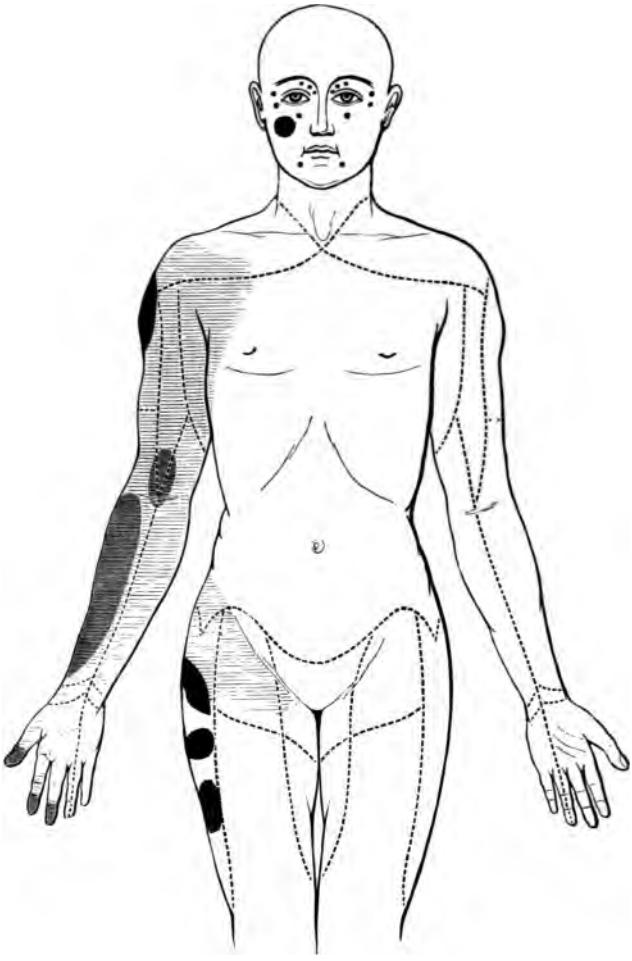
Case.—W. R., æt. 50, a foreman shunter on the Midland Railway, was admitted into the General Hospital, Nottingham, under my care on July 25, 1889, complaining of swelling of, and loss of use in, the right arm.

History.—At thirteen years of age he had a sore on the penis, with a slight discharge. He had no secondary symptoms, so far as he knows, and has had none since.

He was in Michigan, U.S.A., for eighteen months nineteen years ago, and had remittent fever while there; and afterwards was ill for four months with "ague" in London, in University College Hospital, under the care of the late Dr. Wilson Fox. He has had no attack since. He is married and has nine healthy children. There is no family history of nervous disease. He states that he takes a pint of beer daily, but no spirits. As he has gradually worked his way up to the position of a foreman at an important railway centre, I was at first inclined to accept his statement of sobriety. But I am assured by the doctor who treated him in the earlier part of his illness, before his admission to the hospital, that the patient admitted drinking spirits for some time past, and that for a fortnight before the acute illness began he had remained at home, drinking rum all day long. The patient's wife confirmed this, but both requested that the information should be kept from me at the hospital. And even now the patient denies to me that he ever took spirits to

excess. He used to smoke 6 or 8 oz. of strong tobacco a week; lately he has not exceeded 3 or 4 oz. He has been

FIG. 8.

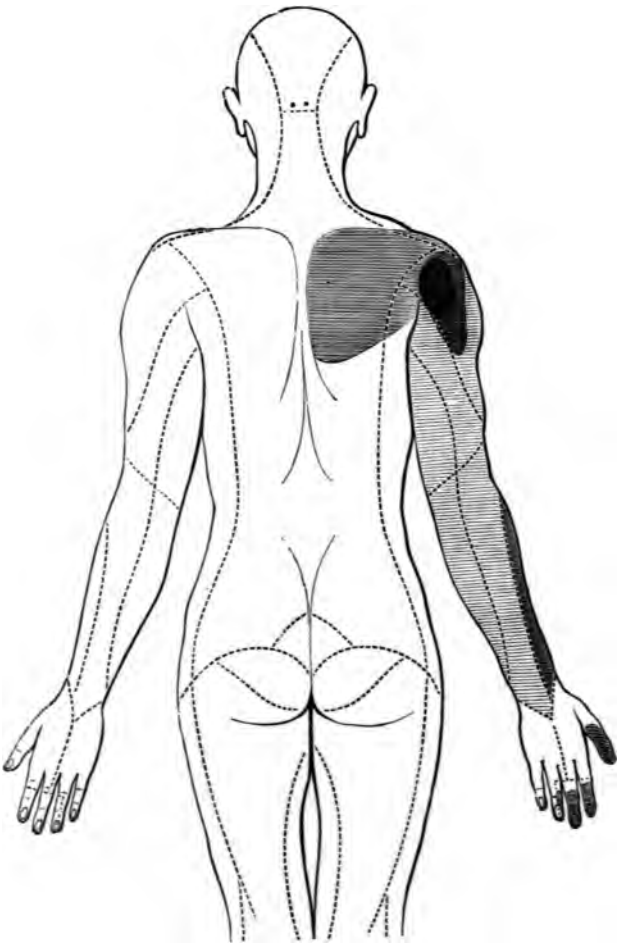


In the above figure the black denotes the areas of brown pigmentation, with thickening of the skin. The shading represents the distribution of the anæsthesia, which varied in degree as shown by the depths of tint.

advised to give up alcohol and tobacco absolutely. He used to weigh 14 stone, now only weighs 11.

History of present illness.—He has been in a depressed state of health, both physically and mentally, for the past

FIG. 9.



In the above figure the black denotes the areas of brown pigmentation, with thickening of the skin. The shading represents the distribution of the anæsthesia, which varied in degree as shown by the depths of tint.

two years, but continued his work till five weeks before admission. He then noticed his right arm was becoming

weaker, and a few days later, after going to bed comparatively well, he awoke in the morning to find the right upper arm, forearm, forefinger, and thumb painful, swollen, and pitting on pressure. He states positively that the hand, middle, ring, and little fingers were unaffected. The swelling reached its maximum in twenty-four hours, and was quickly followed (not preceded) by discoloration of the tips of the thumb and index finger. The whole arm was somewhat dusky. The skin on the ends of the affected fingers sloughed, became black, and peeled off. On admission the black dead skin had almost separated, leaving the new, pink, healthy skin exposed to view. The patient is sure there was no formation of matter or fluid of any kind. The process was a *dry* gangrene much resembling Raynaud's disease. There was no swelling of the axillary lymphatic glands. There had been no preceding injury to the hand or arm. About the same period the patient states that brownish patches began to appear over the right malar bone, over the right deltoid, and on the outer aspect of the right thigh. In some of these patches the skin was slightly thickened, in others not. In all common sensation was diminished, and sensibility to pain so considerably lessened that a pin stuck into the skin only gave a sense of pressure, but without pain. Sensibility to heat and cold was normal. He also had some weakness of the right leg. The knee used to "give way" while he was walking, but he never fell. He had been treated by mercurial inunction, and the gums were a little tender on admission.

At the beginning of his illness he had some difficulty in beginning to micturate, but that passed off in a few days. He had not been accustomed to carry weights on the shoulder.

State on admission.—He is a tall, powerful, well-developed, well-nourished man. No disease of the heart or of any other of the viscera can be detected. The urine is clear, acid, free from albumen, and of sp. gr. varying from 1008 to 1020, and on two occasions definite traces of sugar were detected. There is no facial paralysis, no trembling of the lips; the tongue is protruded straight, and speech is unaffected so far as is noticed, though the patient says that sometimes he is unable to say words which he remembers and wishes to use. The vocal cords move normally and well. The pupils react to light and accommodation, and nothing wrong with the fundus can be detected. There is no paralysis of the internal or external ocular muscles.

The swelling and œdema of the arm had disappeared by the time of his admission, and there was no muscular wasting. The deltoid was hard and indurated. The skin over it was partially anæsthetic and analgesic, and somewhat thickened and discoloured over the posterior half. The biceps in its upper two thirds was large and of a woody hardness, moveable from side to side, and giving no indication of exudation outside its sheath, which would tend to fix the muscle or disguise its form. The hard swelling is quite uniform, and is slightly tender on pressure. The lower edge of the pectoralis major is affected in a similar way. The skin over the biceps is not thickened, moves freely, and no very definite alteration of sensibility can be detected, though there seem to be patches of impaired sensation.

There are areas of deficient sensibility along the radial side of the forearm, and on the thumb, index, and middle fingers. The fingers are rather larger than those of the other hand, and swell and become dusky unless the hand is kept up. The superficial veins are pervious, and the radial and ulnar pulses are as good as on the other side.

The arm cannot be raised above the level of the shoulder, and cannot be completely flexed. He cannot touch the præcordia, the opposite shoulder, or put the arm behind the back. It was thought at the meeting that this might be in part due to an affection of the elbow- and shoulder-joints. The subsequent progress of the case goes to show that there were no adhesions in the joints. The humerus could always be freely rotated. It is probable that the general œdematous swelling of the limb left some plastic effusion into the tissues around the joints.

On partially flexing the right knee (complete flexure was not possible on account of pain) much pain was caused on the outer side of the thigh about the middle of the vastus externus, where a hard tender mass could be felt deep in the muscles, but not well defined because of the tension of the fascia lata.

The patches of brown anæsthetic skin on the thigh have been already mentioned, and are represented on the accompanying figure.

There is no affection of the left side at all.

Electrical examination.—Electro-sensibility is very much diminished over the front of the right upper arm when compared with the left.

Electro-contractility: Faradic.—The right serratus magnus

cannot be made to contract by the strongest current; the left contracts well.

The right deltoid contracts fairly; the biceps not at all to a current which tetanises the left biceps; the triceps fairly; the forearm muscles well. All the muscles of the upper arm which contract at all do so much less vigorously, and require a much stronger current than the muscles on the left side.

Galvanic.—The biceps contracted feebly to a strong current, but KCC was greater than ACC, showing the absence of the reaction of degeneration.

The serratus magnus did not contract at all. The other muscles of the upper arm contracted normally in kind, but feebly in degree when compared with those of the other side.

Three weeks later the deltoid contracted very feebly to the faradic current, but better in the anterior half than in the posterior.

He complains much of spontaneous aching pain about the posterior triangle of the neck. The knee-jerks were at first equal on the two sides; later *the right was much more feeble than the left.*

On examination of the axilla, chest, and neck no growth could be detected.

The *treatment* has been mainly by iodide of potassium and mercury (twice to *slight* salivation), but later by tonics—iron and quinine. Now he is again taking iodide. He has less pain when taking iodide. The muscles have also been faradised twice a week and shampooed. The faradisation has been discontinued, as he thought it caused after-pain.

Course and present condition.—The patient has been steadily losing power in the arm. It can now (November, 1889) only be raised to an angle of 45° from the side. It can be about semi-flexed (even with the forearm in the prone position), but not more. This would indicate that the flexion is chiefly, if not entirely, due to the long flexors of the wrist and the supinator longus. Pronation and supination are free, as are also the movements of the wrist and fingers. The shoulder is raised by the superior portion of the trapezius and the levator anguli serpulæ, while the serratus magnus (and lower portion of the trapezius?) are paralysed.

There is much atrophy of the supra-spinatus, infra-spinatus, and the posterior half of the deltoid. The biceps is only about two thirds the size it was on admission, but retains a woody hardness, and is slightly tender on pressure. The induration

of the lower fibres of the pectoralis major has disappeared, and has been followed by some muscular atrophy.

The anæsthesia in the distribution of the external cutaneous nerve is complete. In the area supplied by the cutaneous branches of the lower division of the circumflex it is well marked but not complete. On the leg and face sensation has improved. The discoloration of the skin is somewhat less marked in some parts, though quite evident in others.

The patient can still write fairly. There is now some tremor of the upper lip, but it is not constant. He complains a good deal of pains in the right side of the neck and in the arm, but there is very little tenderness. He also has feelings of numbness and tingling in the right thigh.

There is a cicatricial, keloid-like, irregularly shaped mark on the outer side of the middle of the right upper arm, but the skin is scarcely at all thickened. The mark is said to have existed for years, but to vary much in appearance from time to time.

November 27.—The patient is improving; he can now raise the arm above the line of the shoulder. To-day I removed some tissue from the indurated biceps by means of Dr. Leech's modification of Duchenne's "emporte pièce histologique." It caused much pain, but was fairly successful in removing tissue. The puncture produced no deleterious after effects. On the contrary, the little bleeding to which it gave rise seemed to diminish the size of the swelling. Part of the tissue was examined fresh in salt solution, part in glycerine, and the remainder was hardened in spirit, stained with alum carmine, with logwood, and with eosin, and mounted in balsam. There was no excess of fibrous tissue between the muscular fibres that were removed, but there was much granular matter. Many of the fibres appeared to be covered on the surface by a granular layer, as if an interstitial fluid effusion (? lymph) had coagulated upon them. Some of the muscular fibres were well striated. In the majority the striation was poor and imperfect. A considerable minority had completely lost all trace of striation, had become granular, and were splitting up transversely and longitudinally. A few had undergone a *hyaline* transformation.

January 5, 1890.—The pains in the posterior triangle of the neck, of which he used to complain so much and which used to keep him awake at night, have ceased to be troublesome, and are now only occasionally felt. Sensation in the arm is not altering much. The thickening of

the skin and anæsthesia over the scapula have disappeared. So also have the thickening and anæsthesia over the malar bone. His power of motion improves daily. The grasp with the right hand registers 80 lbs., that with the left 110 lbs. He can now raise the right hand above the head, place it on the opposite shoulder, and behind the back. There is much less stiffness of the elbow-joint, which can now be flexed to an acute angle. There is now no sign of anchylosis of either shoulder or elbow joint, which in November last was feared. The indurated portion of the biceps remains as hard and as sharply defined as ever, but is smaller in area. It now affects about the upper three sevenths of the muscle.

January 8, 1890.—*Electrical examination, right side: Faradic current.*—The deltoid contracts moderately well, but the anterior portion better than the posterior. The biceps does not contract at all to a very strong current which by diffusion tetanises all the other muscles of the forearm and upper arm. The serratus magnus contracts nearly as well as on the left side.

Galvanic current.—The anterior part of the deltoid contracts much better than the posterior; in the latter ACC> KCC. The lower part (*i. e.* the portion below the induration) of the biceps contracts to a current from twenty cells, but ACC is much greater than KCC, thus showing well-marked reaction of degeneration.

January 18.—He was made an out-patient, still improving. The deltoid was growing in bulk. The induration of the biceps remained unaltered. The arm could be raised straight above the head.

May 5, 1890.—Patient went back to his work eight weeks ago, but was only able to continue for three weeks, since which he has done nothing. He was obliged to give up his work on account of want of mental power, confusion, and loss of memory. He would have to read a letter through six or seven times to correct mistakes, and used to forget the names of the men working under him. In fact, he has cerebral symptoms somewhat resembling those of general paralysis. He has tremor of the tongue and marked tremor of the upper lip. But he pronounces his words freely and well, and is not at a loss for words. He is rather depressed.

The movements of the right arm are now quite as good as those of the left. All his muscles now are weak and flabby (in the left arm as well as the right), but the only detectable local atrophy is in the posterior portion of the deltoid, the

supra- and infra-spinati, and the lower border of the pectoralis major. The right biceps is smaller than the left. It does not harden or contract when the elbow is flexed, this movement being performed chiefly if not entirely by the brachialis anticus. Even when the elbow is flexed against considerable resistance the biceps can be rolled from side to side as a lax sausage-shaped body. The indurated mass is much smaller than formerly, and now affects less than the upper third of the muscle. The hard part is sharply defined, and is about 2 inches long by 1¼ broad. The induration has always retained the normal shape of the muscle, and has never presented any resemblance to a gumma. The microscopic examination, too, of the removed tissue tends to disprove its being a gumma. The lump is still slightly tender when handled.

The leg has completely recovered, and the patient is not unduly fatigued by walking four miles to the hospital and back. He now sleeps badly. Though pressed, he denies taking spirits now. He becomes excited, confused, and upset by the simplest matters. He cannot stand the noise of his children playing, and has to go out. He cannot read for more than a few minutes at a time without becoming restless, and being obliged to go out of doors and walk about.

Sensation remains blunted over most of the right arm and over the right pectoral muscle, but it is only lost in the distribution of the external cutaneous nerve.

The knee-jerks are present on both sides, but *the right is decidedly weaker than the left.* The pupil reactions are normal. The urine is free from sugar and albumen.

In the earlier stages of pigmentation and anæsthesia without muscular atrophy the condition bore some resemblance to that of anæsthetic leprosy. The progress of the case, however, made the distinction clear.

The nerves chiefly affected by the neuritis appear to have been the musculo-cutaneous, circumflex, posterior thoracic, external anterior thoracic, the supra-scapular, with some cutaneous branches of the median, and some branches of the anterior crural.

Note.—With regard to the unilateral distribution of the anæsthesia in this case it is stated by Gowers (vol. ii, p. 901), "In France hemianæsthesia is said to be not uncommon in alcoholics, and some examples of it have been described by Magnan, similar apparently to the unilateral loss that is met with in hysteria. But the condition is rarely met with in this country."

IV.—*Chronic Rheumatic Arthritis in a child.* By G. H. Makins. *Exhibited November* 8, 1890.

E. F., æt. 9, female. No family history of rheumatism beyond rheumatic pains in case of father. Mother healthy, married twenty-eight years; has had twelve children, of whom patient is the tenth. Two children have died, one convulsions, one "consumption of the bowels." Mother has suffered with rheumatic pains for last few years. Brothers and sisters healthy.

Child had an attack of measles at two and scarlet fever at seven, but was healthy, and could walk and run about well until three years and four months of age; "she then had a fit, and after this lost the use of her limbs;" and although she has occasionally hobbled about she has been practically bedridden since. One week after the fit her mother noticed her fingers and knuckles swollen, then the wrists and elbows, and soon after the knees and ankles. All were affected within a period of about three weeks. Since then the swelling has persisted, fluctuating somewhat in degree. Stiffness was noted about a year after the commencement of the disease. Has had pains in the limbs throughout, and suffered with coldness of the feet. The only treatment resorted to has been cod-liver oil internally.

On admission looks fairly healthy, but rather puffy about face. Bright and intelligent, but has had no education. No pain except on first movement after prolonged rest. No signs of rickets, no deformity of head or spine; chest moves freely in respiration. No sign of disease of internal organs.

Upper extremities.—Shoulders normal. Elbows: Swelling, obliteration of hollows around olecranon; all movements very limited, forearm semiflexed, grating marked in left. Wrists swollen, especially on dorsal and radial aspects, very limited movement accompanied by grating. Metacarpo-phalangeal joints also stiff, cannot grasp a small object, little finger-joint the most free. Interphalangeal joints especially affected, contrasting sharply with the somewhat wasted fingers; the index finger is the most markedly deformed. There is no deflection of the fingers as a whole to the ulnar side. The skin of the forearm is thin and glossy, the nails are ridged longitudinally.

Lower extremities.—Both hips firmly anchylosed, the limbs being adducted and rotated inwards. Knees enlarged, and movement is limited, with grating. Ankles, same condition. Well-marked hallux valgus of great toes, movement very slight (had never worn boots).

The child can stand, and walk in a very tottering fashion with assistance. The legs are wasted, and the skin is thin and glossy. The joints generally are enlarged, the bones apparently taking small part in the enlargement. There are adhesions throughout; limited movement causes little pain. Common sensation apparently good.

The child was treated with massage, warm alkaline baths, and tonics, but improved little or not at all during a stay of three months.

V.—*A case of Acromegaly.* By Percy Flemming, M.D. *Exhibited December* 13, 1889.

THE patient is a woman, æt. 44; has been married and had two children, one of whom is said to be strong, the other weak. There is nothing of importance in the family history beyond the fact that her father was very rheumatic. The patient has been a cook and worked much in the dairy, and in this way has been exposed a good deal to cold and draughts. She has had no illness except measles at the age of twenty. Has been troubled a good deal with "dead fingers." There is no trace of syphilis. She came to Moorfields Eye Hospital in November, 1889, complaining of failure of sight. The following history was then obtained. The sight has been failing for last year, and the eyelids have been getting bigger for the same time. Six years ago the hands began to enlarge, and at same time there were severe shooting pains from the elbows to the fingers, distinctly worse at night. Two years later the feet began to enlarge, and she had great difficulty in getting boots to fit her, and now she has to get them specially made. A little later she noticed an alteration in her features. She does not think that the hands and feet have changed much the last two or three years. The catamenia ceased six years ago, when she was thirty-eight, having been very irregular for the

two preceding years. When shown to the meeting the condition was as follows:

Head.—The face is of an elongated oval shape, broad across the malars; the right parieto-temporal region is a shade more prominent than the left; the parietal regions are somewhat bossy. The superciliary ridges are not very prominent; the eyelids are full, apparently from excess of subcutaneous tissue, more marked in the upper than the lower; there is no œdema. There is distinct exophthalmos on both sides, the right eye being a little more prominent than the left; the right malar is a little more prominent than left.

Nose is much enlarged, broadened out across the cartilages, which are distinctly thickened; the nasal bones seem natural. *Ears* not thickened. *Lower jaw* is massive, especially the body, so that the chin is very prominent; when the mouth is closed the lower teeth project quite one third of an inch beyond the upper. (The patient is quite sure that this used not to be the case.) *Lower lip* is thin and everted. *Tongue* is somewhat enlarged. Palate is very arched and narrow (keel-shaped). *Teeth:* The alveolar processes seem natural; several were wanting.

Neck is short and thick. Thyroid body can be felt and seems natural. *Thymus:* The note over the manubrium is distinctly less resonant and there is more resistance than natural, but there is no distinctly defined area of dulness.

Costal cartilages.—The second, third, fourth, and fifth on the left side are much enlarged; the right ones are so to a less extent.

Upper limbs.—The *clavicles* are massive, especially the inner third of the left; the *scapulæ* seem natural; the humerus, radius, and ulna all seem natural. From the tip of the acromion to the tip of the olecranon (the arm being fully extended) measures $12\frac{1}{4}$ in. on both sides; from the tip of the olecranon to the tip of the styloid process of ulna measures 10 in. on both sides. (It may be noted here, that the length of humerus calculated from the patient's height [5 ft. $3\frac{1}{2}$ in.] is $13\frac{1}{10}$ in., of the ulna $9\frac{1}{2}$ in.) The *hands* are greatly enlarged, and have the following measurements: From the tip of the styloid process to tip of middle finger $7\frac{3}{4}$ in. on the right side, $7\frac{3}{8}$ in. on the left; the circumference at the right metacarpo-phalangeal joints $9\frac{1}{2}$ in., at the left $9\frac{3}{8}$ in.; circumference at the middle of the right middle finger $3\frac{3}{8}$ in., at the left $3\frac{3}{8}$ in.; circumference at the tip of middle finger 3 in. on both sides. The

DESCRIPTION OF PLATE V.

To illustrate Dr. Percy Flemming's case of Acromegaly.

Shows the elongated oval shape of the face; the right parieto-temporal region a little more prominent than the left; exophthalmos in the right eyeball more prominent than the left; right malar a little more prominent than the left; the nose broadened out across the cartilages, which are thickened; the lower jaw massive.

DANIELSSON & CO., PHOTO PRINT.

DESCRIPTION OF PLATE VI.

To illustrate Dr. Percy Flemming's case of Acromegaly.

Shows dorsal aspect of the hands.

Normal hand shown above for comparison.

DANIELSSON & CO., PHOTO PRINT.

DESCRIPTION OF PLATE VII.

To illustrate Dr. Percy Flemming's case of Acromegaly.

Shows hypertrophy of feet.

DESCRIPTION OF PLATE VII.

To illustrate Dr. Percy Flemming's case of Acromegaly.

Shows hypertrophy of feet.

Dawson & Co., Photo Paris

DESCRIPTION OF PLATE VII.

To illustrate Dr. Percy Flemming's case of Acromegaly.

Shows hypertrophy of feet.

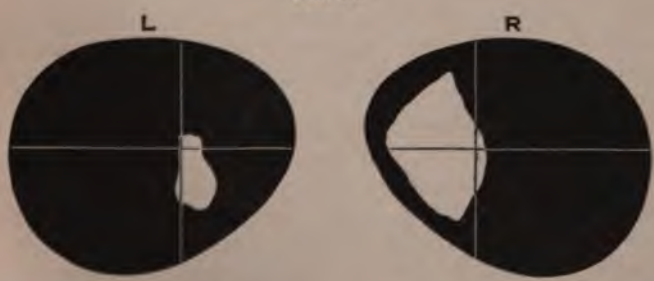
phalanges and *metacarpal bones* are broad and massive. There is a large increase in the subcutaneous tissue of the fingers and thumbs, especially over the terminal phalanges, forming a series of cushion-like masses, those over the terminal phalanx of each thumb being enormous.

Lower limbs.—Iliac crests are distinctly thickened. The fibula measures $13\frac{1}{3}$ in. on both sides; the tibia $13\frac{1}{3}$ in. on both sides. (The calculated length is—tibia $13\frac{3}{5}$ in., fibula $13\frac{1}{2}$ in.) The bones are not apparently enlarged; the anterior borders of both tibiæ are nodular and curved. The *patellæ* are both big, measuring 3 in. across their widest part. Both *feet* are much enlarged, and have the following measurements: From the heel to the tip of the great toe on both sides 10 in.; circumference round metatarso-phalangeal joints $10\frac{7}{8}$ in. on right side, $10\frac{1}{2}$ in. on left; circumference round instep $10\frac{3}{4}$ in. on right, $10\frac{1}{2}$ in. on left side. The metatarsal bones and phalanges are enlarged, and there are large developments of subcutaneous tissue over the terminal phalanges, especially those of the great toes, but none at the sides of the feet.

The *back* shows distinctly some bowing backwards in the upper dorsal region.

Special senses.—Sight is very defective; right V. $= \frac{7}{200}$ J. 20, left V. $= \frac{3}{200}$, counts fingers (no improvement with glasses). Ophthalmoscopic examination: Left, some uvea on lens capsule, media otherwise clear; disc very pale and atrophic, veins large, arteries small. Right, media clear, disc

FIG. 10.



pale especially in outer part, edge irregular, veins large. Pupils equal, react to light and accommodation sluggishly; consentaneous movements feeble. The fields of vision show loss of temporal half of right field, and loss of upper nasal quadrant in addition to the temporal half on the left.

Smell seemed slightly defective on left side; most likely due to a catarrh at the time. *Hearing:* Watch heard at a distance of six inches from either ear. *Taste* quite natural. *Touch* quite natural.

There has never been any headache, and since the onset there have been no pains in the limbs.

Skin rather coarse; perspires freely, especially when attention is given to her. Nails rather brittle. Hair dark and rather coarse.

Digestive functions quite natural; no excessive thirst.

Temperature tends to subnormal, averaging 97°.

Urine.—Averages 40 oz. daily; urea 2·5 per cent.; no albumen or sugar. No peptones present.

Voice is low and weak, not otherwise altered; epiglottis does not seem enlarged.

VI.—*Case of Acromegaly.* By A. Quarry Silcock. *Exhibited December* 13, 1889.

MRS. B., æt. 53, had always lived in London. Of seven children, one was born dead, one died at seven years of age of hip disease, one at twenty-six years of age of "consumption;" the remainder were healthy. She had always enjoyed good health, with the exception of an attack of pleurisy nineteen years ago, after the birth of the last child. No other facts pointing to syphilitic infection were obtained. The catamenia had ceased, apparently naturally, some eight or nine years.

She had noticed her fingers to be getting larger during the last six years; she had had two wedding rings cut off and larger ones made during that period by reason of the increasing size of the ring finger, for instance. Her friends had noted her features to have become larger; her nose had commenced to get bigger after a blow thereon, which happened seven years since.

She stated that she had had no pain in the limbs at any time, and that although she could do her work as well as ever, her hands felt "big and clumsy." She had increased in weight each time she had been weighed lately, but she thought that she had become thinner about the body.

DESCRIPTION OF PLATE VIII.

To illustrate Mr. A. Q. Silcock's case of Acromegaly.

The right-hand photograph shows the present appearance of the patient. There is thickening of the nose, both the nasal cartilages and the skin and subcutaneous tissues being affected. The lower eyelids are baggy, the lower jaw is massive, and the cartilages of the ears are thickened. The photograph also shows the hypertrophy of the fingers.

The left-hand photograph is reproduced from a portrait taken of the same patient several years ago.

FROM PHOTOGRAPHS BY E. TREACHER COLLINS, ESQ.

DANIELSSON & CO., PHOTO PRINT.

Present condition.—Her features are large, the skin of the face coarse, the expression phlegmatic. The nose is most markedly affected, the enlargement being due partly to thickening and expansion of the nasal cartilages, partly to thickening of the skin and subcutaneous tissues. The lower eyelids are "baggy" by reason of a transparent œdema, as in myxœdema. The lower jaw is massive, the lower incisor teeth projecting beyond the upper. The cartilages of the ears are apparently thickened like those of the nose. The tongue is very large and slightly furred.

The mental condition and the special senses are normal. The laryngeal cartilages are probably thickened; the thyroid gland appears to be of the normal size.

The hands and feet are markedly enlarged, especially the hands; the epithet "huge" might be applied to the former. The enlargement is due partly to thickening of the bones, partly to that of the skin and subcutaneous tissues, and it is symmetrical and uniform. It is impossible to say whether there is or is not any lengthening of the fingers; the forearms, legs, and other parts of the body are not affected.

The arteries are fibroid, and pulse of high tension, but there is no albuminuria. The lungs are emphysematous, and the heart-sounds muffled; there is no evidence of cardiac hypertrophy.

It may be added that the woman has taken large doses of iodide of potassium now for many weeks, but without any obvious improvement in her general condition.

VII.—*Two cases of Acromegaly.* By E. Kenneth Campbell. Introduced by Mr. Silcock. *Exhibited December* 13, 1889.

CASE I.—George T., æt. 56 in March, 1890.

Personal and family history.—Born in Framlingham, Suffolk, where he lived until fifteen years old. Then resided at Ipswich for seven years, and for the rest of his life in London. Has always followed the occupation of a working tailor. Mother died when he was two years old (phthisis?). Father was killed (very healthy). Never had brothers or

sisters. Maternal grandfather died at an advanced age. Uncle and aunt died last summer (both eighty-seven years). Has no knowledge of any other relatives.

Had rheumatic fever at age of eleven. With the exception of this has always enjoyed very excellent health up to twelve months ago.

History of present condition.—About twelve years since patient noticed that his face, nose, and eyebrows were becoming bigger, which condition has more especially developed within the last eight years. The people with whom he worked were accustomed to say, "What a big nose father has!" (a favourite term used by them in speaking of or to him). Has observed that external occipital protuberance has got large during the last six years, his attention being more especially directed to this owing to the pain he experienced on lying down in bed.

Synchronously with facial enlargement has been the growth of hands, the feet only having become bigger during the past four or five years. Used to wear eights for boots, now requires tens.

Lower lip has got thick during the last five or six years. Has noticed tongue becoming bigger within the last six or seven months.

Present state.—The contour of the face is most typically egg-shaped, with the long end inferior. An enormous development of superciliary ridges, malar bones, and malar processes of temporal bone, which all form one continuous curved line. Nasal bones are greatly enlarged, the bridge of the nose being quite flat, and of about ½ in. in breadth. The nasal cartilages are also hypertrophied, the entire nose having a characteristically expanded appearance. Mastoid processes are of huge dimensions, extending outwards and downwards, and are continued into the very prominent superior curved lines, which meet behind in an enormous external occipital protuberance that projects from the surface of the occipital bone for at least 1 in. The occipital crest stands out a prominent vertical ridge. Calvaria is quite normal. Lower and upper jaws apparently quite normal (judged from history and appearance). Ears: The cartilages are thickened and stiff to the feel. Tongue is of huge size. Has increased both in length and breadth. He often bites it. Its consistency is normal. Eyes: The only thing noticeable here is that the patient had paralysis of the right sixth nerve, which has disappeared under treatment. Thyroid cartilage much increased size. Sternum: The transverse ridge on sternum (at junction

PLATE IX.

To illustrate Mr. Kenneth Campbell's first case of Acromegaly.

PHOTOGRAPHED BY E. TREACHER COLLINS, ESQ. DANIELSSON & CO., PHOTO PRINT.

of manubrium with gladiolus) is enormous, being 1 in. long from above downwards, and standing out from the level of the sternum to the extent of ½ in., but rounded off. This ridge is continued uninterruptedly into the second costal cartilages, forming one unbroken transverse line. The junction of the second costal cartilage with the second rib is abrupt and prominent. Hands: Carpus and metacarpus apparently normal. The phalanges, however, are much thickened; this thickening seems to be lateral, and not to have taken place in the other diameters—certainly there is no increase in length. It is remarkable for its perfect symmetry, in each individual finger and of the two hands. Feet: Tarsus and metatarsus normal. Phalanges thickened in a similar manner to those of the hands. Here, again, symmetry is a marked characteristic. No increase in length. Ribs are normal. Clavicles normal. Scapulæ: ossa innominata normal, and presenting no indication of outgrowths. Other bones normal. Soft palate and tonsils normal. Voice has become deeply guttural within last few years. No organic disease. Arteries healthy. No albumen or sugar. Muscular system decidedly wasted. Special senses and intelligence unaltered. Skin and subcutaneous tissues normal, with the exception of the thickening above mentioned over ears, eyelids, and lips.

Subjective phenomena.—Has had great pain over eyebrows for the last twelve months. At times this is terrific. It has yielded partly to the administration of arsenic.

Thyroid gland is natural, and there are no grounds for thinking the thymus to be enlarged.

Patient looks very ill, presenting the appearance as though he were suffering from granular contracted kidney or from an advanced condition of malignant disease, although there are no reasons for either supposition. If such exist, he seems to have, in the fully developed stage, the acromegaly cachexia.

Case 2.—Susannah H., æt. 50 in August, 1890.

Father died at age of 55 of "bilious fever." Mother is alive and well. No other relatives show any history of disease which bears upon the case.

Married at the age of 25, and has had two children, both of whom are healthy. She never had a miscarriage. Patient has always enjoyed good health, but for the past ten years has had an annually recurring bronchitis during the winter.

History of present condition.—Seven years ago patient noticed that her hands and feet were getting larger, formerly

wearing "6" and "5" for hands and feet respectively, and now requiring "8" and "7." All this time she has suffered from intense pains in eyeballs and behind ears. Occasionally the pain in eyeballs has been "something fearful." Has observed face becoming bigger during the last two years, especially the nose, lips, eyelids, and ears. Has also been conscious of the tongue "growing," which she frequently bites in the act of chewing. Relatives have detected this growth of hands and face. Sister-in-law says she cannot bear to look at her hands, "they are so ugly." Mother said three years ago that she would hardly recognise her as her daughter, so changed had her appearance become; this after an absence of four years. Menstruation ceased during the Jubilee week, and has never been resumed. The husband is a very healthy man.

Present state.—Malar bones are prominent. The nose is the chief exaggerated feature; it is broad and bulky, the nasal bones and cartilages being much thickened; the alæ are greatly expanded; the bridge is broad and flat, being ½ in. across (as in Templing's case). The general outline of face is that of an egg with the large end downwards. Mastoid processes are big and prominent, the left being slightly the larger. Lower lip is very thick and voluminous, upper lip apparently natural. There is a swelling of big size (adipose ?) between angle of jaw and mastoid process on both sides, but more marked on the right. Ears are bulky and stiff, but sense of hearing is unaltered. Eyes have double atrophy of both discs (primary); lower lids big and stiff. Thyroid cartilage is enlarged, but the gland is normal. Hands and feet present exactly the same change as in Templing, the carpus, tarsus, metacarpus, metatarsus, being unchanged, while the phalanges are greatly flattened out; symmetry here, again, is a marked feature; there has been no increase in length. Other bones unaltered. Viscera normal. Muscular system is slightly wasted.

Intelligence.—Speaks gutturally, but there is no slowing of voice. Considers that her memory has become defective recently.

Subjective phenomena.—Has great pain, always at nighttime, behind ears and over eyebrows. Suffers pains at ends of fingers often of a morning, which then get cold and lose their power of holding. About three weeks ago (January 21, 1890) had a very severe pain in right hand, which passed up right arm to corresponding shoulder.

VIII.—*Suppuration in a Shoulder-joint affected with Charcot's disease, from which an outgrowth of the capsule was removed.* By W. G. SPENCER. *Exhibited December* 13, 1889.

THE Clinical Society considered at length the connection between Charcot's disease and rheumatoid arthritis when Mr. Baker's* three cases of Charcot's disease were before it. It will therefore be necessary to note the course of the disease in these two cases only as far as it differs from the ordinary type.

In one of Mr. Baker's cases septicæmia and death followed the amputation of the great toe, and the knee-joint of the same side, which had been one of the joints affected by Charcot's disease, was found at the time of death in a condition of suppuration. But this was clearly secondary to the septic absorption.

Karl Roser† has described a case in which abscesses and fistulæ formed about the ankle-joint after it had been affected by Charcot's disease for several years. The joint was found on examination to be in a condition of tuberculosis, apparently a secondary affection.

Some of the perforating ulcers forming in the course of Charcot's disease are said to arise from the suppuration of affected toe-joints.

G. B. Carpenter, æt. 54, had been quite well until March, 1888, and there was no evidence that he had ever had syphilis. His left shoulder-joint became suddenly swollen to twice its natural size, without apparent cause and without pain. He continued to work for a month, whilst the shoulder still remained swollen to the same size. Then he found the joint becoming loose, so that he could not fix it well, and hence his arm was weak. He was admitted to the National Hospital, Queen Square, under Dr. Beevor in September, 1888, and the symptoms of locomotor ataxia were noted. The joint remained distended, and in December, 1888, Mr. Horsley made an incision through the deltoid; clear fluid with shreds of fibrin escaped. After the incision wound had healed aseptically a cyst formed in connection with the joint over the

* Baker, Morrant, *Clin. Soc. Trans.*, 1885.

† Roser, Karl, *Beiträge zur Lehre von Rhimpfusse und vom Pflatfusse*, Marburg, 1885.

pectoral muscle. This was aspirated several times before he left Queen Square.

On April 18, 1889, he came to the out-patient department at Westminster, complaining that he could not work with his left arm.

The symptoms of locomotor ataxia which I found were—entire absence of knee-jerk, but normal sensation in the skin of the extremities; the pupils very small in size, did not react to light, but did so to accommodation; slight ataxia in the movements of the arms, the gait being unaltered, and he stood with the eyes shut. He complained of lightning pains occasionally in the forearms, and of slight incontinence of urine. The left shoulder-joint appeared as if a free excision of the head of the humerus had been made at some distance below the surgical neck. On pressing up the end of the humerus against the glenoid cavity much grating was to be felt. Over the lower part of the pectoralis major, below and internal to the joint, was a cyst the size of a hen's egg. The skin covering the cyst was natural except in the middle, where it had been punctured. The fluid could be slowly compressed out of the cyst into the joint cavity. The joint moved freely in all directions without any sign of inflammation. All the other joints were healthy.

On May 6 he returned with the cyst swollen to the size of a child's head at birth, and which threatened to burst through the skin. The shoulder-joint showed no signs of inflammation. He was admitted, and a free incision made into the cyst. There escaped turbid serous fluid and shreds of fibrin.

At first the cavity seemed to be going to heal. However, on May 13 he was attacked with severe vomiting, pains in the limbs, and paralysis of the bladder. The ataxic symptoms were much more marked in the arms. At first sight his symptoms resembled those of a gastric crisis. But the temperature was between 102° and 103° F.; and although no fluid could be felt in the joint cavity, yet it seemed probable that the symptoms were due to a collection of pus there.

On May 15, under an anæsthetic, the finger passed from the cyst over the upper border of the pectoral muscle into the joint. The conical upper end of the humerus could be felt, the head and neck having completely gone to some distance below the surgical neck. The glenoid cavity was bare of cartilage but not changed further. The cavity formed by the distended capsule was filled, not by pus, but by a soft fibrous growth, attached in pedunculated lobes round the upper

end of the humerus. Between the growth and the wall, and amongst the lobes, there was space for some pus. This explained why fluid could not be felt in the cavity, and drainage was clearly obstructed. A small incision was made through the scar in the deltoid, and the outgrowth was cut and torn away from its base around the humerus.

A drainage-tube from the pectoral cyst was passed through the deltoid, and constant irrigation kept up for three weeks. From the time of the operation all the symptoms simulating those of a gastric crisis disappeared, and he has not had a similar attack. During his confinement to bed, necessitated by the irrigation, he became prostrate, incontinence of urine was complete, and the urine became alkaline. When he moved the right arm, it waved about irregularly. Also his back became red. At the end of the three weeks he was made to get up, for the first day or two by main force. But in a few days he regained sufficient muscular power to walk. He had no pain in the left shoulder at any time. Both wounds healed soundly with free movement at the shoulder. He recommenced his work as a carpenter.

At present, December, 1889, he is less thin and haggard; his general health has improved since the healing of the wounds. The ataxic symptoms have slightly increased. The gait is becoming marked, he begins to be unsteady when the eyes are shut, and he cannot walk in the dark. There is no incontinence of urine, nor difficulty in defæcation. He has only very slight nocturnal pains occasionally. The left shoulder is firm and freely moveable. All the muscles are still well developed, and he can use them fairly. He can bring the arm to the level of the shoulder; beyond that it can be raised passively to any point above that level.

The fibrous outgrowth which filled the cavity left by the disappearance of the head and neck of the humerus kept up the presence of fluid, and caused sufficient irritation to produce the cyst. The suppuration began in the cyst and extended to the joint. The collection of pus caused symptoms like those of a gastric crisis, except for the raised temperature.

The disuse of the muscles increased the ataxic movements, but these were again diminished when the muscles became active.

The treatment has produced a satisfactory improvement so far that, pending the slow advance of the disease of the spinal cord, he is able to work.

IX.—*Case of Inflamed Nævoid of the Leg, complicated by subcutaneous hæmorrhages.* By JOHN H. MORGAN. *Exhibited December* 13, 1889.

THE patient was five months old, and had been for two months under observation at the Hospital for Sick Children. The parents were healthy; there were three older children, all quite robust. The patient, a boy, was born at full term. About a week after birth a "bruise," the size of half a crown, was observed on the inner side of the left knee; this increased until it occupied the area which did not vary after its admission. When first seen at the hospital there was a tense, hard swelling from the middle of the left thigh down to within half an inch of the ankle. The skin was shiny, hot, and of a dark purple colour, varied by darker and lighter patches, and with a faint touch of yellow, such as seen after an ordinary bruise. Firm pressure produced pain. There was no fluctuation. The skin of the foot, particularly over the dorsum, was œdematous but not discoloured. The glands in the groin were slightly enlarged.

Since admission the limb has slightly diminished in size, and the œdema of the foot has subsided. A few days after the child was under notice numerous minute petechiæ were observed beneath the skin of the face, the arms, and the abdomen, and on the disappearance of these, a large subcutaneous hæmorrhage was noticed on the outer side of the right calf. A few days later similar ecchymoses appeared over the right elbow, and later still over the lower dorsal vertebræ.

The diet of the child before admission had been breast-milk for the first month, then Ridge's food with equal quantities of milk and water. After the appearance of the ecchymoses the child, who had since admission been fed on cow's milk and barley water, was given by the advice of Dr. Cheadle meat juice and peptonised milk, and the hæmorrhages at once ceased, but recurred when the child was given milk during twenty-four hours only without any peptonising powders.

The child has improved in health and has increased in weight. The skin of the body remains yellow. There are no signs of rickets, no snuffles, no cranio tabes. The temperature has shown no exacerbations. Examination of the blood showed a proportion of one white corpuscle to twenty-eight red, and

a scratch of the skin did not produce any continuous hæmorrhage such as would indicate hæmophilia. There has been no bleeding from the mucous membranes.

Postscript.—The child was seen six months later, when both general and local conditions were found to have greatly improved.

X.—*Tumour of Skull in left frontal region in a boy.* By John H. Morgan. *Exhibited December* 13, 1889.

THE boy exhibited to the Society was 11 years old. The father was healthy, the mother appeared phthisical. There are four other children, and there have been two miscarriages. This boy was healthy until about five years ago, when the present swelling commenced, accompanied by slight pain in the head, and has continued to gradually increase. There is no history of any blow or fall.

There is now a hard tumour with smooth surface over the left frontal region. Its margins are fairly defined, and project inwards a little over the middle line, upwards to the edge of the scalp, and outwards to the middle of the temporal fossa. The greatest prominence is about a third of an inch beyond the corresponding level of the opposite frontal eminence. The supra-orbital ridge is not enlarged.

The teeth are not notched, the corneæ are clear. There has always been myopia of the left eye, and examination by Mr. Wainewright shows "the sclerotic ring well marked, slight choroidal changes round disc."

No enlargement of liver or spleen exists. The boy is subject to headaches, but the pain is general and not confined to the area of the swelling. He complains of occasional slight pain over the lower part of the right tibia, but no swelling is to be detected, and there is no great tenderness. The intellect is not very acute.

XI.—*Hyperostosis of Frontal Bone and Orbital Walls, associated with epilepsy, and treated by trephining.* By A. Quarry Silcock. *Exhibited February* 14, 1890.

T. S., æt. 25, labourer, attended the Moorfields Eye Hospital in September, 1889, by reason of the presence of a bony lump on the forehead and displacement of the left eyeball. The lump in question was situate just above the root of the nose, and almost wholly to the left of the middle line; it evidently encroached upon the inner and upper part of the left orbit, being there felt as a bony, nodular mass, the posterior limits of which could not be defined; by it the eyeball was displaced forwards, and less markedly downwards and outwards. It was roughly the size of half a Tangerine orange; its surface was somewhat uneven or nodular, and gradually shaded off into that of the bone around, the summit being elevated about half an inch above the general surface of the latter. The movements of the globe were good, and the upper lid moved freely. There was at this time no sign of optic neuritis. V. $= \frac{6}{12}$; -1 D., Cyl. $= \frac{6}{6}$. He did not complain of pain in the affected region of the cranium, except as an occasional incident, but during the last two years he had been subject to epileptic fits, having had about forty in all. Whilst in the hospital he had a fit, which, commencing suddenly with a scream, was followed by unconsciousness, respiratory fixation, tonic and subsequent clonic spasm, foaming at the mouth. On recovering a dazed condition supervened, the patient not knowing where he was or what had happened. No aura, sensory or motor, preceded the fit, which may be taken as typical of the fits in general. The swelling on the forehead had been noticed three months, but twelve months previously the left side of the forehead had been remarked to be different from that of the right. In June, 1887, he struck the top of his head, but not severely; five days afterwards he had the first fit. There is no evidence that he is the subject of syphilis, congenital or acquired.

The operation of trephining over the seat of the lump on the forehead was decided upon because it was thought that the intra-cranial pressure might thus be relieved, so lessening the tendency to the epileptic fits; and looking to the favourable result of this procedure in another very similar case, that the

progressive thickening of the implicated bones might possibly be delayed or stayed.

At the time of the operation the outer surface of that portion of the frontal bone entering into the lump was found to be beset by several small, nodular, ivory-like exostoses, and generally roughened; the frontal sinus of that side was obliterated by new formation of bone, which was for the most part porous, though here and there exceedingly hard and dense. Owing to the great thickness of the frontal bone at the site of the trephining—3½ cm.—the instrument would not work through to the inner table, so that in order to expose the dura mater a chisel had to be used. The inner surface of the portion of the inner table removed was coarse, but otherwise unaltered; only a small opening was made through it by reason of the difficulty in reaching it at so great a depth.

The man made a good and uninterrupted recovery from the operation; twenty-five days afterward he had a fit of a similar character to that described, but none since that date, four weeks having now elapsed.

The most interesting clinical feature in connection with the case lies in the fact that the fits have diminished in frequency since the operation. The length of time during which the thickening of the bone has been going on may safely be put at a longer period than two years, and thus the inference would be that the epilepsy is secondary in point of time to the bone lesion.

XII.—*Case of Alcoholic Paralysis.* By the late Walter Pearce, M.D. *Exhibited March* 14, 1890.

L. N., æt. 25, married, was under the care of Drs. Priestly and A. de Butts, of Folkestone, to whom I am indebted for the case before admission to St. Mary's Hospital.

The patient became pregnant in April, 1888; in August was treated for neuralgia, and again in September for a slight attack of pneumonia. Severe vomiting came on, which was attributed to pregnancy. To relieve this, premature labour was induced in October, but vomiting continued, accompanied with great wasting and loss of power in the legs. The patient

also complained of shooting pains in the limbs and great tenderness.

I was called to see the patient on March 10, 1889. She was in a perfectly helpless state, lying in a semi-prone position with the legs drawn up on the abdomen, and the face turned towards the bed; she was not unconscious, but in a drowsy, confused state of mind, with loss of memory. The tongue was coated with a brownish-yellow fur, and the lips were very dry and cracked. The skin was pale and sallow, with a few venous stigmata over the malar bones. Vomiting was the most distressing symptom, which took place after all food.

The temperature was normal.

The wasting of the limbs was extreme, especially on the exterior aspect of the thighs, where all muscular tissue seemed to have disappeared. The calves of the legs were in a similar condition. In every part the patient was exceedingly tender, especially in the calf muscles of the legs.

No movement of any kind could be made with the lower extremities. The arms were very much wasted, but the patient was able to use them slightly, though she could not feed herself. Up to this time the possibility of a large administration of alcohol had not been suspected. On making strict inquiry it was ascertained that from six to seven bottles of brandy had been purchased weekly, of which the patient had taken nearly the whole. The mother had given for many months small quantities of brandy at frequent intervals, both by day and night, as she found it gave temporary relief. It was also found that the patient had been a barmaid, and assistant in a confectioner's shop where wines were sold. The further administration of alcohol in any form was prohibited. The galvanic current was applied, and massage with passive movements was used. The vomiting ceased, and only returned when there was good reason to believe that brandy had again been given. The tenderness and pain decreased, but the knees remained flexed. Tenotomy was performed on the hamstring tendons to release the contractions of the knee-joint, which was then fixed in plaster of Paris. During four months the patient made very little improvement. In July, 1889, she was sent to St. Mary's Hospital.

The patient on admission was anæmic, and was wasted to a remarkable extent; she was quite unable to stand or sit up. Both legs were flexed to nearly a right angle, the right more than the left. The feet were extended in a line with the legs,

and the toes were flexed. There was no voluntary power in the muscles of the lower extremities.

Passive movement of or flexion at the ankle caused great pain. The feet dropped immediately they were raised. The extensors in the forearm were very much wasted, and the dropped wrist marked. No fibrillar tremors were observed. The muscles of the extensor surface of the thigh and of the calf were almost absent.

The greatest circumference of the thigh 6 in. above the patella was 8 in. The measurement of the legs 3 in. below the head of the fibula gave $6\frac{1}{8}$ in. on the right side, and $6\frac{3}{8}$ on the left side. There was no contraction to faradism in the muscles of the legs, and only a slight movement of the toes could be induced with the galvanic current. No reaction to faradism could be obtained in the erector muscles of the spine. In the arms the muscles were much wasted; the right upper arm measured $6\frac{3}{4}$ in., and the left $6\frac{1}{4}$ in.; the forearm $6\frac{1}{8}$ in. on the right side, and $6\frac{1}{4}$ in. on the left. The thenar and hypothenar eminences of the hand were much atrophied.

The muscles of the back, shoulder, and pectoral region were also atrophied to a marked extent, as shown by the photographs.

The patient on admission weighed 5 st. 3 lbs. The deep and superficial reflexes were completely lost in the lower extremities. The abdominal and epigastric reflexes were present. In both legs below the knee there was almost complete anæsthesia, except at a point on the lower third of the left fibula, which was hyperanæsthetic. Firm pressure on the thigh and calf muscles caused much pain.

Hyperalgesia was also present in the muscles of the arms. The sensibility to heat was lost in the legs, except at the point where there was no anæsthesia. There has been no œdema nor any trophic lesions of the skin. At no time has any facial paralysis been observed, and there has always been perfect control of the sphincters. There has never been any pain referred to the back. The mental condition of the patient has been quite clear; she has also slept well.

The vomiting has not recurred, and the alimentary system has not given rise to any trouble. The liver was not enlarged.

The diagnosis of alcoholic paralysis rests on the progressive paralysis commencing in the extensor muscles of the legs, with rapid wasting and shooting pains in the limbs, hyperalgesia, and the double foot and wrist drop. The patient has

never, however, expressed a desire to have any alcohol. The treatment has consisted in giving the patient liberal diet. Massage with passive movements has been employed, and the knees have been extended by means of weights and an extension apparatus. Galvanism and faradism have been applied to the affected muscles. The patient has taken no alcohol except some stout, which was offered with the view of observing if there was any desire for stimulants; but the stout was not acceptable, the patient complaining of drowsiness.

At the present time, seven months from admission, the patient has slowly but steadily increased in strength, and has gained two stone in weight.

The arms have regained their natural size, and have increased 2 in. in circumference. They are so strong that the patient can raise herself from the floor on to a chair with them. She can press the dynamometer to 60 with both hands.

The legs can be easily raised from the bed and extended. On the left side the foot can be slightly flexed, and the four outer toes extended, but the foot still drops on the right side. Muscular tissue has considerably developed in the lower extremities. The calf now measures 10 in. in each leg, and the thigh 12 in. The patient is able to walk on crutches by keeping her feet well in front of them. The toes remain flexed, and doubled up under the foot unless they are kept well in advance. The anæsthesia remains in the left leg, on the inner side of the tibia. Over this area there is also loss of sensibility to heat. On the right side the anæsthesia exists over the outer side of the leg, and to the dorsum of the foot. Over the whole of the right leg there is little or no sensibility to heat, as tested with the hot spoon. Hyperalgesia of the muscles of the leg remains, as well as pain in the joints of the ankles and toes.

Remarks.—The chief point to remark in this case is the difficulty of detecting the fact that alcohol has been the cause of the paralysis, and thus failing to make a correct diagnosis.

Recovery has been slow, and even a year after the removal of the cause the hyperalgesia remains.

XIII.—*A case of Sarcoma of the Naso-pharynx, showing long periods of immunity from recurrence after operation.* By WILLIAM H. BENNETT. *Exhibited April* 11, 1890.

THE early history of this case is recorded by Mr. Holmes in vol. viii of the Society's *Transactions* under the title of "A Case of Naso-pharyngeal polypus."

The patient has been operated on three times: (1) in 1866 a large tumour was removed from the pharynx after excision of the whole of the left upper jaw, with the exception of the orbital plate, for the purpose of getting free access to the growth; (2) in 1874 a large recurrent mass was removed from the nose and pharynx after opening up the cicatrix of the first operation; (3) in 1890 a recurrent mass of large size, consisting of three distinct tumours, which occupied the whole of the left nasal fossa and upper part of the pharynx, was removed by again opening up the old scar, but on this occasion sufficient access to growth could only be obtained by resecting a considerable portion of the orbital plate which had been left untouched previously.

The operations 1 and 2 were performed by Mr. Holmes, No. 3 being performed by Mr. Bennett.

The main points of interest in the case are the following:

I. The occurrence of epistaxis as the sole indication of the onset of the original disease, and as the only symptom which drew attention, in each instance, to recurrence.

II. The long periods of immunity from symptoms of recurrence after operation, viz. eight years after the first removal and sixteen years after the second.

III. The progressive changes in the character of growth. The original tumour consisted for the most part of fibrous tissue with a small admixture of spindle-cells.

The recurrent mass removed in 1874 was composed of equal parts of fibrous tissue and spindle-cells, amongst which were found a few oval cells.

The tumours last removed (1890) were typical specimens of mixed spindle-cell and myeloid sarcoma.

XIV.—*Case of Pedunculated Sarcoma of Groin.* By C. E. Cotes. *Exhibited April* 11, 1890.

C. P., æt. 32, a very unhealthy-looking man, but presenting no symptoms of syphilis, came to my out-patients at the Lock Hospital complaining of a swelling in the left groin.

His history is as follows :—Some twelve years back he had syphilis, for which he was treated at the Lock for a period extending over twelve months. A year later, for no reason that he can give, he had a bubo in the left groin; this was opened, and after discharging for three months healed. Since then has felt no inconvenience until two years back, when he noticed some small lumps forming beneath the skin in region of the old bubo. As these gave him no pain he paid no attention to them, but they gradually increased in size, and just before last Christmas one of these lumps burst through the skin, and has since then rapidly increased in size. A few weeks back he had two attacks of severe hæmorrhage from this growth. He states that from its first appearance through the skin it has been pedunculated, but that lately this pedunculation has increased. The patient is losing flesh very rapidly, and since I first saw him the growth has quite doubled its size.

There is now to be seen a pedunculated, very tender growth, the size of a large orange, most probably of a sarcomatous nature, situated in the left groin. The skin surrounds the pedicle and extends quite halfway to the fundus of the growth, its limit being marked by a thin bluish line, presenting rather the appearance of healing. In all parts the skin is fixed to the tumour, is smooth, and there are no irregularities upon it. Around the base of the pedicle are several enlarged and very hard glands; these run above and parallel to Poupart's ligament, and on deep pressure in the left iliac fossa there is a decided fulness extending towards the lumbar vertebræ.

XV.—*Complete Paralysis of the Left Vocal Cord in conjunction with ataxic symptoms.* By CHARTERS SYMONDS. *Exhibited May* 9, 1890.

C. R., æt. 25, a poulterer, and accustomed to use his voice a good deal, came to the throat out-patient room at Guy's Hospital complaining of hoarseness, and of difficulty in swallowing. On examination of the larynx much saliva was found in the back of the throat concealing the view, and he appeared to have some difficulty in getting rid of this material. The left cord was motionless and lay fully abducted; the mucous membrane over the arytænoid cartilarge looked swollen, and at first I thought there was some infiltration fixing the cord. Subsequent examinations dispelled this surmise, for no change took place in the appearances, and moreover the membrane was seen to be wrinkled. While this point was in doubt Dr. Macdonald was kind enough to look at the case, and also thought that there was some swelling of the membrane, and suggested a puncture. Subsequent examinations, however, disproved this idea. At the next visit his father, who accompanied him for the first time, told us that his son walked peculiarly, and then on examination the nerve symptoms were made out. Dr. Taylor took the man into his ward, and I am indebted to him for permission to show the man to-night.

The man's father is alive and in good health; the mother died of bronchitis. The patient himself has had no illness of a serious nature, and denies having had syphilis. He drank a fair quantity of beer till a year ago, since which time he has been more abstemious. In March, 1889, he became hoarse, and had pain on deglutition. The voice has remained in the same condition since that time, but the swallowing has varied, being better at times.

There is no loss of voluntary power or of sensation. He walks with an unsteady gait, and when his eyes are shut sways to and fro like a man with locomotor ataxy. The pupils are small, but react both to light and in accommodation. The knee-jerks are somewhat exaggerated. He says that there is some numbness of his left hand and of the feet. Bladder is normal in action. The optic discs are healthy, and vision is normal.

The paralysis is evidently central in origin, but what the exact nature of the central lesion is remains open for discussion. Many of the symptoms of locomotor ataxy are absent, and the knee-jerks instead of being absent are exaggerated. The other possibilities are disseminated sclerosis, and some syphilitic lesion, and possibly general paralysis. While attending my out-patients he had full doses of iodide and of mercury without any benefit. Since he has been in the ward Dr. Taylor is inclined to think that under the same remedies there is some improvement.

It was pointed out by Dr. Kidd that the paralysis of the cord is complete, and by another observer that the right cord does not move well. It is quite true that the right cord does not become so tense in phonation nor so straight as in the normal action. Nor does it go so far over to the opposite side as is commonly seen.

XVI.—*A case of so-called Pemphigus of the Conjunctiva, with associated lesions in the mouth and in the larynx.* By Charters Symonds. *Exhibited May* 9, 1890.

THE patient, æt. 42, was sent to me by my colleague Mr. Higgens, on account of some laryngeal complaint. I first saw him some five weeks ago, and there was at that time a red, scarcely raised patch, covering one half of the anterior surface of the epiglottis. There was a smaller patch to be seen apparently on the back of the right arytænoid. These patches resembled exactly those seen in the mouth. To-day a much more extensive disease is seen. The whole epiglottis is thickened, and shows a raised red patch with some grey adherent material; the pharynx shows also a large grey surface extending upwards from below the arytænoids for an inch and a half. This is no doubt the same patch as that seen on the previous examination. The nose is free. The condition of the conjunctiva has been so fully described by Mr. Lang and others in the sixth volume of the Ophthalmological Society's *Transactions* that it is unnecessary to repeat it here. The mucous membrane of the mouth shows a more extensive lesion than appears hitherto to have been described.

On either side of the tongue is a long, narrow, raw surface, bordered by white thickened epithelium, resembling exactly the condition seen in syphilis. The whole of the hard and soft palates show superficial erosions with white patches, and the mucous membrane of the cheek is white, as in an old case of ichthyosis. The left eye has been affected for two years, and already the conjunctiva is thickened and adherent. Below the cornea is a white patch, looking very like a hidden and cicatrising bulla, and the man states that blebs form from time to time in the conjunctiva. He has never had any cutaneous eruption, nor any bullæ about the eyelids or face. There is no history of syphilis, nor does the affection yield to remedies. The disease is actively extending in the larynx and pharynx, and appears to spread from an original patch without the formation of fresh bullæ.

Of the three classes into which Mr. Lang divides these cases, the present comes under the third, or that in which the mucous membranes are alone affected.

XVII.—*Excision of both Hip-joints.* By W. H. Battle. *Exhibited May* 9, 1890.

A BOY, æt. 17, in whom both hip-joints were excised three years ago for acute disease of two months' duration. The case is described and illustrated in the *Lancet*, 1889, vol. ii, p. 733.

He was admitted to St. Thomas's Hospital on March 24, 1887, and left on October 2, 1888. When admitted there was displacement at the left hip-joint with a large abscess, and suppuration in the right hip. Numerous deep bedsores in various parts of the body. Extreme exhaustion and emaciation, with a temperature of 104·2°. The neck of the left thigh-bone was sawn through and the head removed on May 27, with great relief to his sufferings, and on June 7 incision from the front was made into the right hip, and the detached upper epiphysis of the femur taken away.

Now the boy is in good health, and can walk quickly and without pain. Both hips are fixed in the straight position,

and in walking use is made of the lumbar spine, ankles, feet, and to a certain extent of the knees.

There are many deep scars remaining in different parts of the body, some adherent to the bone, the result of bed-sores, but there are no open sores.

The left leg is shorter than the right.

XVIII.—*Spontaneous cure of Tubercular Ulceration of the Larynx.* By Percy Kidd, M.D. *Exhibited May* 9, 1890.

CHARLES B., æt. 52, mathematical instrument maker, came as an out-patient to the Brompton Hospital in July, 1882.

Family history good. No venereal or other disease of importance at any time. In May, 1882, he "caught cold," and since then had suffered from cough, hoarseness, night sweats, loss of appetite, and had wasted much.

The patient, a thin, pasty-looking man, presented signs of consolidation of the apex of the right lung, with small crackling râles. The larynx was congested, and there was superficial ulceration over the left processus vocalis. Similar ulceration subsequently developed on the corresponding part of the right cord.

Under a treatment consisting of cod-liver oil, tonics, and occasional sedative inhalations, gradual but steady improvement ensued in his symptoms and general condition, and he began to gain in weight. The laryngeal ulceration remained in a stationary condition for some time, the râles disappeared from the right apex, the signs of consolidation, however, persisting.

The patient was seen at intervals of a few months for the next eighteen months.

In January, 1884, the posterior portions of the vocal cords presented a reddish ragged appearance, but no active ulceration. The state of the right lung remained unaltered. At this time he had gained 2 st. in weight, and his general condition had greatly improved.

In February, 1887, distinct scarring and puckering of the vocal cords were observed in the seat of the original ulceration.

The treatment has remained the same throughout.

At the present time the patient is sixty years of age, he is able to do his work, and his general condition is excellent; indeed, he may be said to be rather stout.

His only symptom now is slight greyish expectoration at times. The apex of the right lung presents signs of consolidation, but no râles are audible.

The vocal cords are slightly pink in colour, and at their posterior extremities there is some whitish puckering in the situation of the old ulceration. This condition is more marked on the right side, where the scarring has caused a shallow oval depression on the upper surface of the processus vocalis.

The sputum, which is scanty and difficult to obtain, was recently examined for tubercle bacilli with a negative result.

This case is an example of spontaneous cicatrisation and healing of tubercular ulceration of the larynx, associated with arrest of similar disease of the lung.

XIX.—*A case of Subcutaneous "Rheumatic" Nodules without rheumatism or chorea.* By W. B. Hadden, M.D. *Exhibited May* 9, 1890.

THE patient was a healthy-looking boy of twelve, who had never suffered from rheumatism in any form or from chorea. His father had had "rheumatic gout" (probably gout from the history) many years ago; but there was no history of rheumatism or chorea in any member of the family. There were seven children in the family, all healthy; none had suffered from snuffles, thrush, or rash in the skin in babyhood. Before the birth of the patient the mother had four miscarriages in succession, none before or since.

In March, 1890, the patient had a sore throat, and his brother had one shortly afterwards. Both boys had had previous attacks, the patient himself having suffered from two or three attacks during the preceding three months. Neither rash, peeling, nor rheumatic pains were noticed during or after the sore throat in either boy.

Three weeks after his sore throat the patient came to me

as an out-patient, complaining of weakness, giddiness, and palpitation. There was no disorder of digestion, the bowels were regular, and the heart and lungs healthy. The urine contained a small amount of albumen, and during the next five or six weeks albumen was occasionally found. He said that now and again the face and feet swelled, and on one occasion it is noted on the out-patient's letter by the house physician that there was œdema of the face. Six weeks after the boy was first seen, and about two months after the occurrence of the sore throat, the subcutaneous nodules made their appearance, first on the head, then on the elbows and knees. About a month before the appearance of the nodules the mother tells me that he used to complain of stiffness in the limbs, especially in the knees; but there was no pain or swelling of the joints. The stiffness was so severe that he often had to be helped to rise from a chair. He was shortly afterwards admitted under my care into St. Thomas's Hospital.

Around the knees and elbows there were several firm, rather large, painless nodules, which were symmetrical in situation and in size on the two sides. Over the knees the nodules were found around the margins of the patellæ and about the condyles. Over the elbows they were placed over the condyles and olecranon. All these nodules, like those elsewhere, were connected with the periosteal or fibrous structures, and none were adherent to the skin. Some small nodules were found also around the ankle-joints, the metacarpo-phalangeal articulations, and over the spines of the lower cervical and mid-dorsal vertebræ. Over the dorsum of the right scapula there was a large nodule, the size of a hazelnut. On the posterior surface of each tendo Achillis there were two small nodules, symmetrical in size and position.

There were several nodules, some rather large, on the scalp. The heart was examined frequently during his stay in the hospital, and was always normal. The fauces were natural, except for slight chronic enlargement of the left tonsil. The joints were never swollen or tender, and all the nodules were quite painless.

A few days after admission it was found that there was pain in forcibly extending the metacarpo-phalangeal joints of the first, second, and third fingers on each side. The pain on extending the index was, however, much less than that caused by extending the other fingers. There was no swelling of the finger-joints, and no tenderness or sign of irregularity in the

course of the tendons. There was no pain on traction in any other part of the body.

The urine was examined very often; the reaction was always acid; the specific gravity varied from 1016 to 1026, but was usually over 1020; albumen was occasionally present in quantities varying from a trace to one eighth, and the presence of albumen had no relation to taking food. No urinary casts were found. About a month after their first appearance the nodules began to disappear, those about the elbows, behind the tendo Achillis, on the scalp, and on the back becoming smaller before the others. When the boy left the hospital three weeks later no nodules were detected, except those on the outer side of the knees, which were just perceptible. The period over which the nodules made their appearance was about two months. It remains to say that during the first two or three weeks of the patient's stay in the hospital his general condition was below par, the appetite being poor and the bowels confined. The temperature was normal, except on one occasion when it rose to 100·6° in the evening. The nodules were not affected by the administration of salicylate of soda, but their diminution in size corresponded with an improvement in his general state, possibly due in part to quinine and iron.

Remarks.—In the first place I must say that Dr. Barlow, who kindly saw the patient, agreed that the nodules were undoubtedly such as are seen in association with rheumatism and chorea. The only evidence of rheumatism, if evidence it be, was the history of stiffness of the limbs preceding the appearance of the nodules, and the pain evoked on hyperextending the metacarpo-phalangeal joints.

It occurred to me that the sore throat alluded to in the history might have been scarlatinal, and the presence of albumen in the urine lends some support to this view; but the absence of eruption and of desquamation, and the fact that the boy was liable to attacks of sore throat, point in the other direction. On the whole, I am inclined to the latter view.

The only point favouring syphilis is the history of miscarriages before the patient's birth. The absence of any manifestations of the disease in any of the children, the fact that the nodules were identical in all respects with those occurring in children the subjects of chorea and rheumatism, and the disappearance of the nodules without antisyphilitic remedies, offer strong evidence against the syphilitic nature of the nodules.

Sir Dyce Duckworth reported (*Clin. Soc. Trans.*, vol. xv, p. 190) a case of nodules occurring in a patient not the subject of rheumatism, but the possibility of syphilis having a modifying influence was not denied, although the author believed the nodules to be rheumatic in their nature. Dr. Stephen Mackenzie's case, reported in the same volume (p. 188), was subsequently found to be undoubtedly syphilitic (see *Transactions*, vol. xx, Supplementary Reports, p. 397). In an instance reported by Dr. Kingston Fowler (vol. xvii, p. 65) the nodules were not associated with rheumatism, but in this case, again, syphilis was a possible agent in causation.

According to our present knowledge, the subcutaneous nodules in my patient should be regarded as a manifestation of the rheumatic state; but the case is so exceptional that this view must be accepted with some reserve. The subsequent occurrence of any obviously rheumatic symptoms would settle the question. I doubt if there is evidence to say whether or not the association of the nodules with albuminuria is fortuitous.

XX.—*Case of Bilateral Paralysis of the Portio Dura.* By Julius Althaus, M.D. *Exhibited May* 23, 1890.

THIS was a case of bilateral neuritis of the portio dura in the first portion of the Fallopian canal. It occurred in a single man, æt. 45, of temperate habits, who had had no syphilis, but had suffered from subacute rheumatism a month before the present affection came on. The first symptom was difficulty in speaking and masticating, while the food appeared to have lost all flavour. When first seen the patient's face had a statuesque expression, from perfect immobility of the features, with smooth forehead, eyes wide open and staring, epiphora owing to paralysis of Horner's muscle, loss of smell from inability to sniff, flabby cheeks, great difficulty in eating and drinking, mouth half open, loss of the faculty to whistle and to spit, loss of taste in the two anterior thirds of the tongue; no affection of the soft palate, no deafness, tinnitus, or hyperacusis.

The electrical tests showed the signs of degeneration in the nerves and muscles, viz. loss of faradic excitability in both,

loss of galvanic excitability in the nerves, and increased galvanic excitability in the muscles.

The mode in which the disease had come on showed plainly that we had to do with neuritis, which in the absence of other causes had to be looked upon as rheumatic. The peculiar grouping of the symptoms showed—1. That the seat of the lesion was not central, for in central facial palsy only the muscles about the mouth suffer, while here the upper portion of the face was as much affected as the lower. 2. That the affection was not seated in the external branches of the nerve after this has emerged from the stylo-mastoid foramen, because here there was loss of taste, owing to affection of the chorda tympani, and because in external palsy the electric tests are normal or nearly so. 3. That it was not owing to disease of the nucleus of the nerve in the medulla oblongata, as there the upper portion of the face escapes, while it is almost invariably associated with disease of the nuclei of the pneumogastric and hypoglossus nerves, which were unaffected here. 4. That it was not owing to disease of the nerve at the base of the brain, for in this the portio mollis is likewise affected, causing deafness; while there is no loss of taste.

The process of exclusion, therefore, showed that the nerve in this case must have been affected in the Fallopian canal; a view which was also enforced by positive symptoms, such as loss of taste, dryness of the mouth, of the tongue, and the electrical tests. We could, however, go further in localisation, and show that the lesion was confined to the first portion of the Fallopian canal. In the second portion of the latter the Stapedian nerve is given off, which supplies the laxator tympani muscle, and which, when paralysed, causes tinnitus aurium and hyperacusis. These latter symptoms being absent, it was justifiable to conclude that the seat of the lesion was below the origin of the Stapedian nerve.

The prognosis was favourable, owing to the great recuperative power of the peripheral nerves, so different in this respect from the nerve-cells of the grey matter. Indeed, the patient when shown to the Society was already progressing quickly towards recovery. The best treatment was by salicylate of soda or antipyrin, and gentle applications of the constant galvanic current (½ to 1 milliampère).

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